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February 2002

TELECOMMUNICATIONS

Federal and State Universal Service Programs and Challenges to Funding

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Supplementary Notes

Abstract
Title 1 of the Communications Act of 1934 sets forth the nation s telecommunications policy,including making communication services available so far as possible,to all the people of the United States. Early efforts by FCC,state regulators,and industry to promote universal service generally began in the 1950s. 1 At that time,increasing amounts of the costs associated with providing local telephone service were recovered from rates for long distance services.This had the effect of lowering local telephone rates and raising long distance rates,which was intended to make basic local telephone service more affordable.Because American Telephone and Telegraph Company (AT&T)provided both nationwide long distance service and local telephone service to approximately 80 percent of the nation s telephone subscribers,universal service was largely promoted by shifting costs between different customers and services.

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Highlights

TELECOMMUNICATIONS
Federal and State Universal Service Programs and Challenges to Funding

Highlights of GAO-02-187, a report to the Ranking Minority Member, Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, House of Representatives.

Why GAO Did This Study

GAO was asked to provide an overview of current federal and state universal service support programs and to discuss the potential impact of emerging Internet-based voice communications on how these programs are funded. The long-standing goal of universal service—affordable residential telephone service for all Americans—has resulted in a variety of federal and state support programs. Over the years, these programs have evolved as the telephone industry's structure changed and universal service benefits were extended to new groups, such as schools and libraries.

What GAO Found

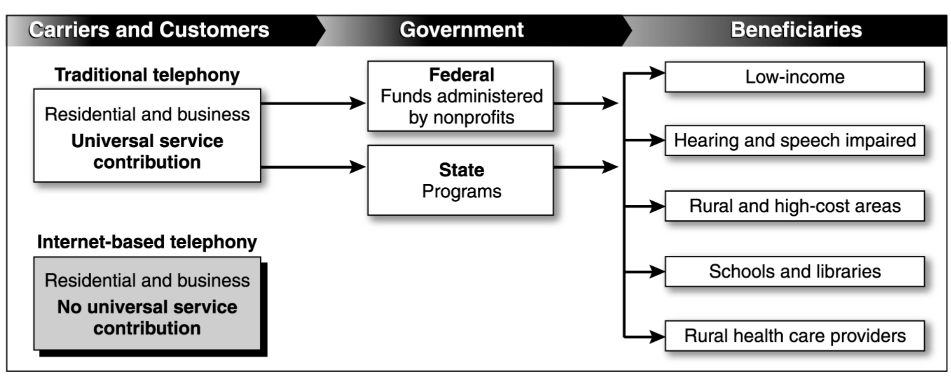
Federal and state universal service programs have helped make telephone service affordable to a wide range of beneficiaries: low-income and hearing- and speech-impaired customers; schools, libraries, and rural health care providers; and rural localities where the costs of providing telephone service are high. The funding mechanisms for these programs generally depend on the revenues of telecommunications carriers. The emergence of new Internet-based voice communications may pose challenges to how these programs are funded in the future.

Federal universal service programs are funded by mandatory contributions made by telecommunications carriers and certain other providers of telecommunications. The amount of the carriers' contributions is a percentage, approved by FCC, of their interstate and international telecommunications revenues. Carriers can and often do pass these costs to their customers. State universal service programs, which supplement the federal programs, also can be funded with fees that are passed on to consumers. In addition, states promote universal service through various rate-setting strategies, such as setting business rates significantly higher than residential rates in order to subsidize residential customers.

Under current federal regulations, revenues from Internet services are not included in the calculations for universal service contributions. Although this new technology is not widespread yet, it may eventually become an attractive alternative and could affect the revenue base from which universal service programs are funded. Some industry analysts question the long-term viability of the current funding mechanisms for universal service and believe that these mechanisms should be reassessed in light of the changing telecommunications environment.

FCC agreed with the information presented in the report.

Universal Service: Current Funding Mechanisms and Beneficiaries



This is a test for developing highlights for a GAO report. The full report, including GAO's objectives, scope, methodology, and analysis is available at www.gao.gov/cgi-bin/getrpt?GAO-02-187. For additional information about the report, contact Peter Guerrero (202-512-2834). To provide comments on this test highlights, contact Keith Fultz (202-512-3200) or E-mail HighlightsTest@gao.gov.

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Abbreviations

ETC	eligible telecommunications carrier
FCC	Federal Communications Commission
IP	Internet Protocol
MSA	Metropolitan Statistical Area
NECA	National Exchange Carrier Association
TRS	Telecommunications Relay Services
USAC	Universal Service Administrative Company

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United States General Accounting Office
Washington, DC 20548

February 4, 2002

The Honorable Edward J. Markey
Ranking Minority Member
Subcommittee on Telecommunications and the Internet
Committee on Energy and Commerce
House of Representatives

Dear Mr. Markey:

Universal service traditionally has meant providing residential customers with affordable, nationwide access to basic telephone service. Two factors pose challenges for achieving universal service. First, low-income households subscribe to basic telephone service at lower levels than households with higher incomes. For example, while approximately 94 percent of all households have telephone service, only 80 percent of households with incomes below $5,000 have telephone service. Second, as population density decreases, the cost of providing basic telephone service increases. Rates based on cost would be higher for customers in rural areas than for customers in more densely populated areas. As a result, universal service programs traditionally targeted support to low-income customers and customers in rural and other areas where the costs of providing basic telephone service are high. Through the Telecommunications Act of 1996, the Congress extended universal service support to include services for eligible schools, libraries, and rural health care providers. Universal service programs are generally funded through mandatory contributions from telecommunications companies. However, 6 years after the 1996 act, emerging technologies pose challenges for long-term funding of these programs.

Because of your interest in universal service policy, you requested that we provide information on (1) the federal universal service programs and how they operate; (2) the state universal service programs and how they operate; (3) how states set local telephone rates among various types of customers and services to promote affordable service and how rates and costs vary across urban, suburban, and rural areas; and (4) how telephone service via Internet-based technology is developing and its potential impact on funding universal service programs.

To respond to the first objective, we interviewed officials from the Federal Communications Commission (FCC) and two not-for-profit organizations that administer the day-to-day operations of federal universal service

programs within FCC's framework of orders and rules. We also reviewed relevant documents regarding the funding and operation of the federal universal service programs. To assess state-level universal service programs, we surveyed 51 public utility commissions in all 50 states and the District of Columbia regarding their universal service programs. We asked the commissions whether their states operated various universal service programs and how those programs are funded. We received responses from all commissions. For the third objective, we asked the commissions about various aspects of their rate-setting mechanisms and about the rates for local telephone service in a sample of places throughout each state. In addition, we used a model developed by FCC that provides estimates of the cost of providing local telephone service to discern how cost varies across urban, suburban, and rural areas. Finally, to respond to the fourth objective, we conducted semi-structured interviews with industry participants and academics familiar with the development of telephone service via Internet-based technology and researched the technical and regulatory aspects of the provision of these services. Our scope and methodology are discussed in more detail at the end of this letter.

Background

Title 1 of the Communications Act of 1934 sets forth the nation's telecommunications policy, including making communication services available "so far as possible, to all the people of the United States." Early efforts by FCC, state regulators, and industry to promote universal service generally began in the 1950s.[1] At that time, increasing amounts of the costs associated with providing local telephone service were recovered from rates for long distance services. This had the effect of lowering local telephone rates and raising long distance rates, which was intended to make basic local telephone service more affordable. Because American Telephone and Telegraph Company (AT&T) provided both nationwide long distance service and local telephone service to approximately 80 percent of the nation's telephone subscribers, universal service was largely promoted by shifting costs between different customers and services.

[1] In 1949, the Congress amended the Rural Electrification Act (REA) to authorize the REA Administrator to make low-interest loans to extend and improve telephone service in rural areas.

Following the divestiture of AT&T's local telephone companies in 1984,[2] FCC made several changes to universal service policy. First, the costs associated with local telephone service could no longer be shifted internally within AT&T. FCC therefore implemented federal access charges—fees that long distance companies pay to local telephone companies to originate and terminate long distance telephone calls over the local telephone network. Access charges were intended to not only recover the cost of originating and terminating long distance telephone calls over the local telephone network, but also to subsidize local telephone service. Second, FCC initiated several federal programs that targeted support to low-income customers to bring the rates for basic telephone service within their reach. At this time, federal universal service programs were for the most part funded through charges imposed on long distance companies.

Twelve years after divestiture, the Congress made significant changes to universal service policy through the Telecommunications Act of 1996. First, the 1996 act provided explicit statutory support for federal universal service policy. Second, the 1996 act extended the scope of federal universal service—beyond the traditional focus on low-income consumers and consumers in rural and high-cost areas—to include eligible schools, libraries, and rural health care providers. Third, the 1996 act altered the federal mechanism for funding universal service. Every telecommunications carrier providing interstate telecommunications services was required to contribute to federal universal service, unless exempted by FCC; and their contributions were to be equitable, nondiscriminatory, and explicit. In addition, FCC was authorized to require any other providers of interstate telecommunications to contribute if the public interest so requires. Contributions from both sources are deposited into the federal Universal Service Fund, from which disbursements are made for the various federal universal service programs.

Both the federal and state governments implement universal service programs. This dual federal-state implementation of universal service

[2] In 1974, the Department of Justice (DOJ) brought an antitrust suit against AT&T, alleging that the company was engaging in anticompetitive behavior. DOJ and AT&T entered into a consent decree that required AT&T to divest its local telephone companies.

arises from sections 2(b) and 254 of the Communications Act of 1934.[3] At the federal level, FCC has issued numerous orders to implement the universal service reforms enunciated in the 1996 act. The Universal Service Administrative Company (USAC)[4] administers, on behalf of FCC, the day-to-day operations of federal universal service programs, although FCC retains responsibility for overseeing the operations of the programs and ensuring compliance with its rules. At the state level, public utility commissions generally regulate local telephone rates and rates for intrastate long distance services. Additionally, these commissions implement many universal service programs initiated at the state level.

Five Federal Programs Are Designed to Further Universal Service

At the federal level, universal service programs target support to high-cost areas, schools and libraries, low-income customers, and rural health care providers. In addition, another program—Telecommunications Relay Services (TRS)—administered by the National Exchange Carrier Association (NECA) furthers universal service by providing hearing- and speech-impaired customers with functional equivalent access to telephone services.[5] USAC and NECA administer two funds, the Universal Service Fund and the Interstate TRS Fund, respectively, into which specified companies deposit contributions and from which USAC and NECA distribute funds for the High Cost, Schools and Libraries, Low Income, Rural Health Care, and TRS programs.

In the year 2000, NECA and USAC disbursed[6] approximately $4.45 billion for the five federal programs. NECA disbursed $47 million to the 11 providers that offer interstate TRS. USAC disbursed approximately $4.4 billion for the four programs that it administers. To receive universal

[3] Section 2(b) assigns responsibility for intrastate telephone rate setting to state governments. Section 254 directs both FCC and the states to take the steps necessary to promote universal service.

[4] USAC is a subsidiary of the National Exchange Carrier Association (NECA). NECA was, at one point, the temporary administrator of the federal universal service programs.

[5] The TRS program is mandated in title IV of the Americans with Disabilities Act and is codified in section 225 of the Communications Act of 1934. While not included in section 254 of the Communications Act with other universal service programs, we nonetheless include the TRS program in our discussion of universal service because the program helps to make telephone service available to individuals who otherwise might not receive service.

[6] USAC reports the amount paid to and due to service providers, while NECA reports payment obligations. We refer to both as disbursements when reporting the program amounts for the year 2000.

service support from USAC, a common carrier must be designated as an eligible telecommunications carrier (ETC).[7] State commissions have the primary responsibility for making the ETC designation. Section 214(e)(1) of the act requires that, to be designated an ETC, the common carrier must (1) offer the services that FCC identified as eligible for universal service support throughout the service area for which the designation is received;[8] (2) advertise the availability of those services; and (3) use at least some of its own facilities to deliver those services. In addition to ETCs, Internet service providers and equipment vendors can receive support from USAC for Internet access and internal connections associated with the schools and libraries program.

Federal universal service programs and TRS are not funded with annual appropriations; rather, funding comes from mandatory contributions made by various telecommunications companies pursuant to the act.[9] These contributions can be, and it appears that many of these contributions are, passed on to customers, sometimes in the form of a line item on customers' monthly telephone bills. For the TRS program, NECA generally collects funds from every common carrier that provides interstate telecommunications services, based on each carrier's interstate end-user telecommunications revenues. For the federal universal service programs, USAC collects funds from telecommunications carriers and certain other providers of interstate telecommunications, based on these providers' interstate and international end-user telecommunications revenues, in accordance with FCC regulations.[10] There are several exceptions to FCC's contribution regulations for the federal universal service programs. Based on interim guidance from FCC, wireless providers may elect to contribute

[7]In some instances, providers of eligible services without an ETC designation can receive support from USAC for the Schools and Libraries and Rural Health Care programs.

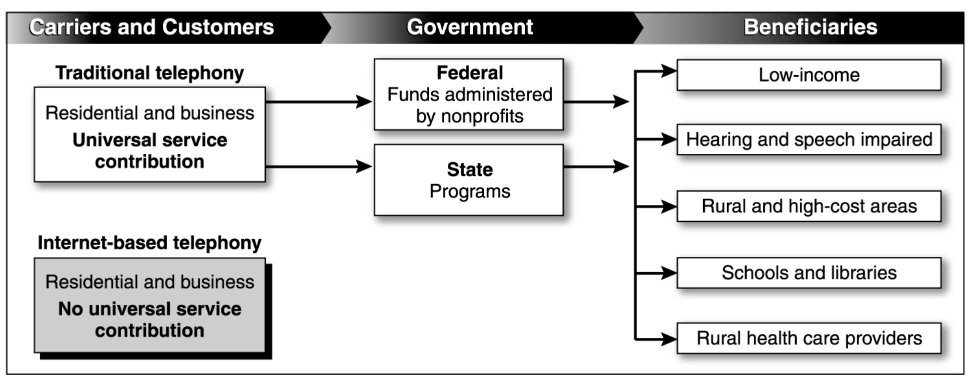
[8]These services include single-party service; voice grade access to the telephone network; Touch-Tone service or its equivalent; access to emergency services, operator services, long distance service, and directory assistance; and toll limitation service.

[9]Funding also comes from certain other non-common carrier providers of interstate telecommunications that FCC has required to contribute by regulation because the public interest so requires.

[10]On a quarterly basis, USAC estimates the funding necessary for the four programs that it administers and the total interstate and international end-user telecommunications revenues. Based on these estimates, FCC approves a "contribution factor" that is applied to each telecommunications carrier's interstate and international end-user telecommunications revenue from the previous 6 months to determine its contribution.

based on certain "safe harbor" percentages.[11] These safe harbor percentages range from 1 to 15 percent, depending on the type of service provided. FCC also has implemented rules and guidelines meant to reduce administrative burdens for interstate companies whose annual contributions would be less than $10,000. These companies are not required to make contributions to USAC. Furthermore, companies with interstate end-user telecommunications revenues that constitute less than 8 percent of their combined interstate and international end-user telecommunications revenues are required to make contribution to USAC, based on their interstate revenues only. Some companies, who currently are treated as providers of "information services," are not required to make contributions to universal service. For example, providers of some new technologies that are beginning to substitute for traditional interstate telecommunications services, such as telephone service via Internet-based technology, are not required to contribute to universal service, as shown in figure 1.

Figure 1: Universal Service Funding Mechanisms and Beneficiaries



Source: GAO analysis of FCC and NECA documents.

[11]The safe harbor percentages are intended to approximate the carrier's percentage of interstate and international end-user telecommunications revenue.

In table 1, we provide a summary of the federal universal service programs.[12]

[12]The Rural Utilities Service (RUS) in the Department of Agriculture also operates two programs that provide telecommunications-related assistance. RUS operates a loan program to provide funding to build and maintain rural telephone systems and a grant and loan program for distance learning and telemedicine.

Table 1: Summary of the Federal Universal Service Programs

Programs and subprograms	Program description	Administrator	Intended beneficiaries
(1) High Cost	Assists customers living in high-cost, rural, or remote areas through financial support to telephone companies, thereby lowering rates for local and long distance service.	USAC	All customers living in high-cost, rural, or remote areas
• High-Cost Loop Support	Assists rural local telephone companies with high local loop costs. Support provided for the intrastate portion of the local loop.		
• High-Cost Support	Assists non-rural local telephone companies with high costs, based on FCC's Hybrid Cost Proxy model of forward-looking costs. Support provided for the intrastate portion of the costs.		
• Local-Switching Support	Assists local telephone companies serving 50,000 or fewer customers. Support provided to offset a portion of the local switching costs.		
• Long-Term Support	Assists local telephone companies subject to rate-of-return regulation that participate in NECA's Common Line Pool with high local loop costs. Support provided for the interstate portion of the local loop.		
• Interstate Access Support	Assists local telephone companies subject to price-cap regulation with high costs. Support provided for the interstate portion of the network.		
• Interstate Common Line Support	Assists local telephone companies subject to rate-of-return regulation with high costs. Support provided for the interstate portion of the network.		
(2) Schools and Libraries (Federal E-Rate Program)	Assists eligible schools and libraries through discounted telecommunications and information services. Discounts available for local and long distance telephone service, Internet access, and internal connection projects (e.g., wiring and networking schools and libraries). Discounts are between 20 and 90 percent.	USAC	Public and private kindergarten through 12th grade schools with endowments less than $50 million; libraries whose budgets are not part of a school's budget

Eligibility	How support reaches beneficiaries	Service provider	Amount paid or due to service providers in 2000
Based on size and cost characteristics of the companies providing service to customers	Support allows eligible telephone companies to charge lower telephone rates than otherwise would be available to customers in high-cost, rural, or remote areas.	ETC	$2.22 billion
Rural companies with local loop costs exceeding 115 percent of the national average	Support allows rural companies to charge lower rates for intrastate services (e.g., local telephone rates).		
Non-rural companies in states with a statewide average cost per line that exceeds 135 percent of the national average	Support allows non-rural companies to charge lower rates for intrastate services (e.g., local telephone rates).		
Small companies serving 50,000 or fewer customers	Support allows small companies to charge lower rates for intrastate services (e.g., local telephone rates).		
Rate-of-return regulated companies that participate in NECA's Common Line Pool	Support allows companies subject to rate-of-return regulation to charge lower rates for interstate access services.		
Price-cap regulated companies with high costs	Support allows companies subject to price cap regulation to charge lower rates for interstate access services.		Program took effect July 1, 2000
Rate-of-return regulated companies with high costs	Support allows companies subject to rate-of-return regulation to charge lower rates for interstate access services.		Program adopted October 11, 2001, for implementation on July 1, 2002; funding not included in total for High Cost programs
Based on economic disadvantage of the population served by the school or library as measured by the number of students eligible to participate in the national school lunch program and designation of the location of the school or library as urban or rural	Eligible companies are reimbursed for providing discounted services to schools and libraries.	Providers of local and long distance services; Internet access services; and internal connections	$1.65 billion

Programs and subprograms	Program description	Administrator	Intended beneficiaries
(3) Low Income	Assists qualifying low-income consumers through discounted installation and monthly telephone services and free toll limitation service.	USAC	Low-income consumers
• Link-Up	Reduces installation fees for qualifying low-income consumers. Installation fees are reduced 50 percent, up to $30. On tribal lands, an additional $70 is available.		
• Lifeline Support	Reduces monthly fees for qualifying low-income consumers. Depending on matching support from the state, monthly fees are reduced between $5.25 and $11.35. On tribal lands, an additional $25 reduction per month is available.		
• Toll Limitation Service	Provides free blocking/limitation service to low-income consumers to prevent or limit the amount of long distance telephone calls.		
(4) Rural Health Care	Assists health care providers located in rural areas through discounts for telecommunications services. Discounts are provided to make rates for facilities in rural areas reasonably comparable to those in nearby urban areas.	USAC	Citizens and health care providers in rural areas
(5) Telecommunications Relay Services (TRS)	Assists hearing- and speech-impaired customers through communications assistants relaying the content of calls between users of text telephones and users of traditional telephones. TRS is intended to provide “functionally equivalent” access to the telephone network for hearing- and speech-impaired individuals.	NECA	Hearing- and speech-impaired customers and customers wishing to communicate with hearing- and speech-impaired customers

Eligibility	How support reaches beneficiaries	Service provider	Amount paid or due to service providers in 2000
Based on the consumer's income or factors directly related to income, with criteria established by the state, unless the state does not have a program, in which case eligibility is based on participation in one of several federal programs	Carriers receive support to provide discounted or free services for low-income consumers.	ETC	$523 million
	Carriers are reimbursed for providing discounted installation services.		
	Carriers are reimbursed for providing discounted telephone service.		
	Carriers are reimbursed for providing toll limitation service.		
Public and not-for-profit health care providers located in rural areas	Companies are reimbursed for providing discounted services to eligible rural health care providers.	Providers of telecommunications services	$5 million
	Companies receive support to provide relay service.	Providers of TRS	$47 million (Obligated)

Note 1: USAC is the Universal Service Administrative Company.

Note 2: NECA is the National Exchange Carrier Association.

Note 3: ETC is Eligible Telecommunications Carrier.

Note 4: Rural local telephone companies are generally smaller and serve fewer customers than non-rural local telephone companies.

Note 5: The local loop is the connection between the telephone company's facility and the customer's premises.

Note 6: A switch is a piece of equipment that routes telephone signals between users.

Note 7: NECA's Common Line Pool is a mechanism where NECA submits a single, averaged tariff for interstate access charges to FCC on behalf of typically small local telephone companies. NECA distributes the revenues derived from the access charges paid for by long distance companies and end-user subscriber line charges (SLC) to participating companies.

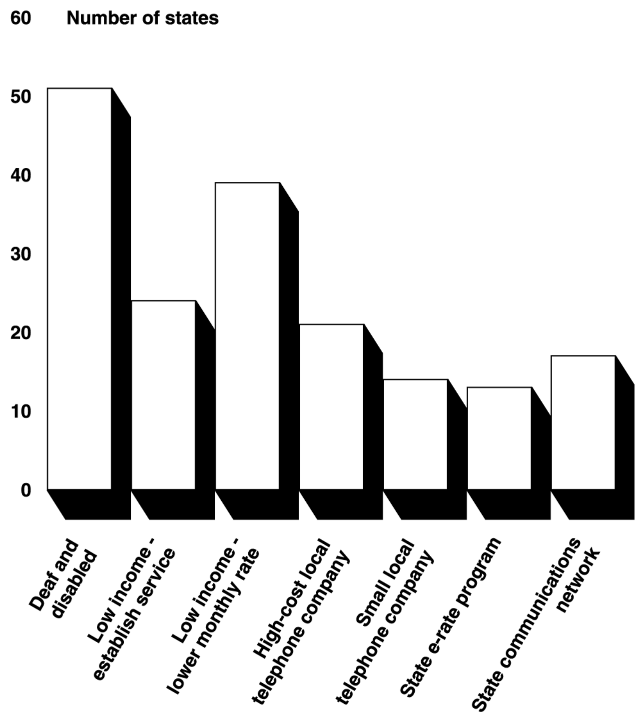
Source: GAO's analysis of FCC, USAC, and NECA information.

States Implement a Variety of Programs Designed to Further Universal Service

In addition to the federal programs, state governments implement a variety of programs designed to further universal service. In figure 2, we illustrate the number of states, including the District of Columbia that implement various universal service programs, based on our survey of public utility commissions (see app. III for program availability by state); we only considered state programs that are independent of or supplement a similar federal program.[13] Some state-level programs target similar beneficiaries as the federal programs, including deaf and disabled customers, low-income customers, and schools and libraries. There are several reasons for this. First, FCC ensures that TRS services are available, sets minimum standards, and certifies state-level TRS programs. Second, the federal Lifeline Program for low-income customers provides additional matching support for state-level programs. In addition, some states also have programs for high-cost and small local telephone companies and state communications networks that allow schools, libraries, government, and community facilities to receive discounted services.

[13] For example, the federal Lifeline Program provides support to customers in all states. However, for purposes of reporting the number of states with a Lifeline Program, we only include states that have an independent program or provide additional funding beyond the federal funding.

Figure 2: State-Level Universal Service Programs in all 50 States and the District of Columbia



Source: GAO's survey of public utility commissions (May – Sept. 2001).

We found that state governments use a variety of approaches to implement state-level universal service programs. Public utility commissions implement many of the programs we identify in figure 2. In our survey of commissions, the two most common approaches that state governments use to fund state-level universal service programs are (1) a fee or tax levied directly on consumers and (2) a fee or tax levied on telecommunications or other service companies that the companies are permitted to pass on to consumers.

States Use Several Rate-Setting Mechanisms to Promote Affordable Basic Local Telephone Service

In addition to state-level universal service programs, there are several rate-setting mechanisms that public utility commissions use to subsidize various aspects of local telephone service. These rate-setting mechanisms subsidize rural, residential, and basic telephone service. These subsidies are made possible through rates set for urban and business telephone service as well as rates set for "vertical" services—such as caller identification (caller ID) and call waiting.

Many States Use Geographic Rate Averaging and Value-of-Service Pricing to Promote Lower Local Telephone Rates in Rural and High-Cost Areas

Geographic rate averaging and value-of-service pricing are intended to promote lower rates in rural and high-cost areas. With geographic rate averaging, customers across a geographic area pay the same local telephone rate, although rates for residential customers are generally different than rates for business customers. These geographic areas can be either small or large, in some instances there is a single geographic area for the entire state. If the geographic area is large, customers in areas where the cost of providing service is low, typically urban areas, will pay rates higher than they would if the area was small and only included customers with low costs. Conversely, customers in areas where the cost of providing service is high, typically rural areas, will pay rates lower than they would if the area was small and only included customers with high costs. With value-of-service pricing, local telephone rates are based on the number of customers that can be called with local telephone service. In rural areas where there are fewer customers to call, rates are set at a relatively low level because the perceived "value" of the local telephone service is lower than in more populous areas where there are greater numbers of customers to call with local telephone service.

We found that state regulators use both geographic rate averaging and value-of-service pricing in setting local telephone rates. In our survey of public utility commissions, 15 commissions report that local telephone rates are the same throughout the service territory of the largest local telephone company in their state. That is, there is a single, large geographic area over which the commission averages local telephone rates. Among other commissions, 19 report that local telephone rates for the largest local telephone company are the same in areas with a similar geographic size or number of lines, thereby implying that there are multiple geographic areas over which the commission averages local

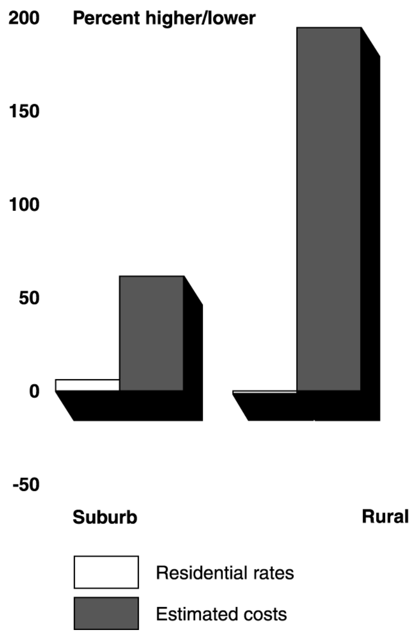
telephone rates.[14] In 40 states where one or more local telephone companies have multiple geographic areas over which regulators average rates, 22 commissions report using value-of-service pricing to establish the relative rates for different geographic areas. Thus, local telephone rates in some states will be lower in rural and less populous areas, relative to rates in urban areas.

The relationship between local telephone rates and estimates of the cost of providing service in central city, suburban, and rural places illustrates the influence of geographic rate averaging and value-of-service pricing. In figure 3, we illustrate how local telephone rates and the estimated cost of providing service for suburban and rural places differs from the rates and estimated costs for central city places.[15] We gathered these data from public utility commissions and FCC's Hybrid Cost Proxy Model (see app. I for a discussion of our sample design, rate data, and FCC's model). There is no statistical difference in residential local telephone rates between central city, suburban, and rural places. However, the estimated cost of providing local telephone service, as measured by FCC's model, increases significantly from central city places to suburban and especially rural places. The estimated cost of providing local telephone service is approximately 61 percent higher and 195 percent higher in suburban and rural places, respectively, than in central cities. The results in figure 3 are consistent with geographic averaged rates and value-of-service pricing—local telephone rates on average do not appear to be highly related to the differences in the cost of providing service.

[14]The remaining state commissions reported two different types of geographic averaging. Nine commissions reported that rates for the largest local telephone company are set the same within broad geographic areas (e.g., urban, suburban, and rural). The remaining eight commissions reported that some other type of geographic averaging approach was used for the largest local telephone company in their state.

[15]We classified places in Metropolitan Statistical Areas (MSA) as either central city or suburb. The Census Bureau reports a central city for each MSA. We classified all other places within an MSA, excluding the central city, as suburbs. We classified rural places as those outside an MSA.

Figure 3: Average Residential Rates and Estimated Costs for Suburbs and Rural Places (Percent Difference from Central City)



Source: GAO's survey of public utility commissions (May – Sept. 2001) and GAO's analysis of FCC's Hybrid Cost Proxy Model.

Single-Line Business Rates Exceed Residential Rates in Most States

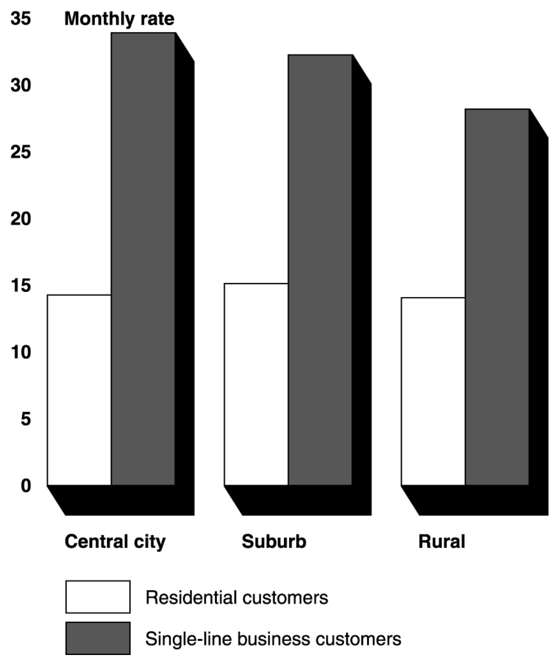
Local telephone rates for single-line business customers are almost uniformly set above rates for residential customers. In our survey of public utility commissions, all states except Wyoming report that single-line business rates are higher than residential rates.[16] In figure 4, we report the average residential and single-line business local telephone rates for central city, suburb, and rural places (see app. I for a discussion of our sample design and rate data). For every type of place, average single-line business rates are approximately twice as high as residential rates. Conversely, the cost of providing service is not likely to be significantly different between business and residential customers.[17] Thus, these results

[16]In Wyoming, business and residential local telephone rates are the same.

[17]Business customers are generally located closer to the telephone company's facilities than are residential customers. This would imply that the cost of providing service to the average business customer is less than that for the average residential customer. Alternatively, most business telephone calls occur during busy hours (e.g., 10:30 a.m. to 11:30 a.m.). This concentration of telephone calls during the busy hours necessitates more switching capacity than would otherwise be necessary and implies higher costs associated with business customers. These effects most likely offset each other.

indicate that single-line business customers are subsidizing residential local telephone service because their rates are approximately twice as high as residential customers' rates for local telephone service while the cost of providing the service is most likely to be similar.

Figure 4: Average Monthly Single-Line Business and Residential Local Telephone Rates for Central City, Suburb, and Rural Places



Note: These are the monthly local telephone tariff rates. The rates do not include the Federal Subscriber Line Charge, which was capped at $5.00 per month for each primary residential and single-line business line, federal and state surcharges to fund universal service programs, federal and state taxes, and long distance charges.

Source: GAO's survey of public utility commissions (May – Sept. 2001).

Vertical Services Often Subsidize Basic Local Telephone Service

Many public utility commissions establish rates for vertical services to subsidize basic local telephone service. Vertical services are options that customers can add to their basic local telephone service. Examples of vertical services include caller ID, call waiting, and conference calling. In our survey of public utility commissions, 40 commissions reported that they regulate the rates for vertical services, and 32 of these commissions reported that rates for vertical services are set above the cost of providing the service to subsidize basic local telephone service.

Intrastate Long Distance Access Charges May Also Subsidize Local Telephone Service

Some public utility commissions use intrastate long distance access charges to subsidize local telephone service. This subsidy can benefit local telephone service by allowing the local telephone company to cover the costs not recovered from local rates. Twenty-three commissions reported setting intrastate access charges above cost to subsidize basic local telephone service, while 21 commissions reported that intrastate access charges do not subsidize basic local telephone service.[18]

Converging Communications Technologies Pose Long-Term Challenges to Federal Funding of Universal Service

The last decade has seen a rapid increase in the use of digital technologies and Internet Protocol (IP) networks for communications. Applications now exist to convert traditional analog voice services to digital, to break the digital voice into "packets," and to send the voice packets over the Internet or other IP networks. However, under the current regulatory structure, providers of these IP voice services do not have to contribute to the Universal Service Fund for the IP voice services. Therefore, as these new voice services gain popularity, concerns exist of whether federal funding levels for universal service might eventually decline. In addition, there is much debate about whether the current federal regulatory framework for funding universal service—with its reliance on interstate telecommunications revenues—is appropriate for digital communications, where voice, video, and data are carried in the same manner over networks that lack intrastate/interstate designations.

"IP Telephony" Is a Small but Growing Service in Both Business and Residential Markets

In the last few years, Americans have increasingly been communicating through applications, such as e-mail, that make use of the Internet or IP networks. Some of these applications allow for real-time voice communications, much like a traditional telephone call. Several different names have been applied to these applications, including "IP telephony," "voice over IP (VoIP)," "Internet telephony," "packet voice," and others.[19]

[18]Five other states either have no intrastate long distance service (e.g., the District of Columbia) or are uncertain or have made no determination of whether the intrastate long distance access charges are subsidizing basic local telephone service.

[19]We asked the experts we interviewed for their definitions of the various names given to IP voice applications. Several said that "IP telephony" and "VoIP" often are used interchangeably in the industry. A number of the experts considered "Internet telephony" to be a subset of IP telephony, referring specifically to calls sent using the Internet rather than a private data network. Those we spoke with differed in their terminology preferences. We have chosen to use "IP telephony" in this report because it is one of the more widely recognized of the various terms.

Essentially, these applications convert analog voice to digital and then break the digital information into "packets," which are routed over an IP network.[20] Packets may be reassembled at the location of the recipient or converted back to analog prior to reaching the recipient. If packet loss and delay can be controlled and minimized, the quality of an IP telephony call can be comparable to the traditional public switched telephone network.[21]

IP telephony is already in use today in a variety of ways. Experts with whom we spoke said that the first uses of IP telephony were by consumers making voice calls using their personal computers,[22] and by companies providing international long distance calling. At times, the companies providing international service are wholesalers to the traditional long distance carriers. Thus, consumers may make an overseas call that is at some point converted to digital without ever knowing about the conversion, and usually without knowing that their call was handled by a company other than their own long distance service provider.[23] We were told that international calling is the most prevalent use of IP telephony today. Even so, a number of the experts we interviewed estimated that IP telephony represents only a tiny percentage of current worldwide voice traffic.[24]

Several of the industry representatives with whom we spoke believed that business users are likely to drive the deployment of IP telephony services. Industry representatives said that there were some cost savings to be realized from a transition to IP telephony, particularly because voice and data would be delivered over a single network, avoiding the duplicative deployment and maintenance costs of separate voice and data networks. For companies with a large number of branch offices, IP telephony gives

[20]In some cases, this is the Internet; and in others, it is a private data network.

[21]We were told by a few of the industry representatives we interviewed that quality problems still exist with IP telephony when it is sent over the Internet.

[22]This application requires that each user has the correct software, as well as special hardware such as speakers and a microphone, and is online.

[23]A couple of our interviewees pointed out that customers do not generally care about the technology behind their telephone calls—only that calls are completed and are of an acceptable quality.

[24]It was mentioned that exact numbers for the amount of IP telephony traffic are not determined because "a packet is a packet," meaning it is unknown whether any particular packet is voice, video, or data. Thus, there is no accurate measurement of IP telephony usage.

them the ability to keep their interoffice calls completely off the traditional telephone network.[25] We were told that an even more significant benefit of IP telephony is the range of new applications it allows and the ease with which these new applications can be introduced. One industry representative stated that IP telephony should not be thought of as merely a substitute for traditional telephone service—it has much greater potential for new features and functions than traditional telephone service. For example, “virtual intelligent assistants” may provide many more options for handling incoming calls than today’s voice mail, and Web sites may allow consumers to contact a customer service representative through a voice call from their computer.

Although business users will likely be the first to adopt IP telephony technologies, residential users will continue to have the opportunity to use IP telephony in the long-haul services, such as international calls and domestic long distance. Local telephone companies, however, have significant investment in their current networks and technologies and may be slower to roll out new services, such as IP telephony. Nonetheless, several people whom we interviewed mentioned the possibility that Windows XP™ may promote residential use of IP telephony, because it has the ability to turn instant messaging into a voice application. Also, competitive voice service providers, such as cable television companies, may use IP telephony over their networks.[26] Several industry representatives cautioned, however, that IP voice services are not yet a market substitute for traditional residential voice service. IP telephony might not provide lifeline services during emergency situations, such as power outages, and does not generally offer E-911 functionality.[27] The offering of IP telephony as a competitive residential telephone service, therefore, may be limited to secondary line service at the present time and will likely be bundled with other offerings, such as video or data services.

[25]These systems usually involve the installation of IP telephony telephones. For calls outside the company, equipment linking to the public switched telephone network is retained.

[26]One equipment provider that we interviewed said there had been more than a dozen trials of IP telephony by cable systems.

[27]E-911, or enhanced 911, means the location of the caller is automatically identified to the emergency personnel receiving the call.

IP Telephony May Not Be an Immediate Threat to Federal Funding of Universal Service but May Threaten Its Long-Term Viability

The assessment and recovery of universal service contributions are governed by a statutory framework established by Congress in the Communications Act of 1934 (as amended by the Telecommunications Act of 1996). The Communications Act is "stovepiped," or compartmentalized, meaning various types of services (e.g., telephone, cable, wireless) are held to different rules and regulations.[28] As discussed earlier, funding for federal universal service generally comes from providers of interstate "telecommunications services," but may also be assessed upon other providers of interstate telecommunications if the public interest so requires. IP telephony is an application that has, to date, been treated in effect as an "information service."[29] Therefore, companies offering IP telephony are not currently required to make contributions to the universal service fund from revenues for IP telephony services.[30] As the deployment of IP telephony technologies moves forward, and more

[28]For further explanation of the stovepiped structure of the Communications Act of 1934 see our report, *Telecommunications: Technological and Regulatory Factors Affecting Consumer Choice of Internet Providers* (GAO-01-93, Oct. 12, 2000), p. 19.

[29]It has never been determined by the Commission whether IP telephony is an information service or a telecommunications service. FCC has stated that certain forms of "phone-to-phone" IP telephony services lack the characteristics that would render them "information services" within the meaning of the statute, and instead bear the characteristics of "telecommunications services." However, FCC found it was not appropriate to make any definitive pronouncements in the absence of a more complete record focused on individual service offerings. *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Report to Congress*, FCC 98-67 (released Apr. 10, 1998) at paragraph 14.

[30]There has been some debate on whether companies providing IP telephony services are engaging in "regulatory arbitrage," or using the regulatory environment to one's competitive advantage. For example, a service provider would be engaging in regulatory arbitrage if it chose to offer IP telephony specifically to avoid including universal service charges on its customers' bills, and thereby perhaps being able to offer less expensive service than its traditional telephony competitors who are legally obligated to contribute to the Universal Service Fund. Several of the experts with whom we spoke noted that regulatory arbitrage had in fact driven the use of IP telephony in international calling. The current international accounting rates system is bypassed with IP telephony, keeping the cost of service provision lower. Regarding the Universal Service Fund, however, companies that exclusively provide international services are exempt from universal service contributions. Thus, we were told that the "information service" exemption was not a motivating factor for these international service providers to have selected IP telephony technology. For domestic service providers, some experts believed that companies have elected to deploy IP telephony technologies because they see convergence of voice and data as the future of the industry—not to avoid contributions to the Universal Service Fund.

businesses[31] and consumers begin to substitute IP telephony for traditional telephone service, the question arises as to whether a decline in the funding for universal service could result. Some of the industry representatives we interviewed believed that IP telephony is not an immediate threat to universal service funding because there is so little IP telephony today.[32] While providers of IP telephony do not pay into the fund at present, this has yet to produce a perceptible financial impact on the fund.

One industry representative pointed out that, as a practical matter, it makes little sense to try to extend the current system—a system based on the amount of interstate telecommunications revenues—to information services such as IP telephony. First, measurement of IP voice revenues would require a means of identifying which packets are voice packets. We were told that, at present, packets are sometimes labeled "priority," but they are not identified as "voice," "data," or "video."[33] We were told such packet identification likely could be done, although several experts pointed out that just because it is technologically possible does not mean it is affordable or that it makes sense from a network engineering standpoint. Second, measurement of IP voice revenues would require a means of identifying packets as "intrastate" or "interstate." We were told that this makes little sense in the world of the Internet, where geographic boundaries are difficult to determine.

However, a number of the industry representatives we interviewed believed that increasing amounts of voice communications will be deemed "information services" because of the manner in which they are provided. Under the current universal service regulatory structure, which primarily relies on assessment of revenues from interstate "telecommunications services," this transformation might *eventually* have a noticeable and negative effect on the universal service funding mechanism. But universal

[31] A representative of several large users of telecommunications explained that the universal service charges on the telephone bills of large companies can run anywhere from 8 to 12 percent of the total telephone bill. Thus, IP telephony calls, which do not include universal service charges, can mean savings of around 10 percent on corporate telephone bills. This savings, along with the flexibility of the network, and the new features and functions offered, may make IP networks attractive to large business end users.

[32] We were given a wide range of views about how much voice traffic would be IP telephony a few years from now, from just a few percent to more than 20 percent.

[33] Several people we interviewed noted that there could be privacy concerns surrounding the labeling of packets as "voice."

service has not been a static system. As the telecommunications industry has evolved, so too has the funding mechanism for universal service. For example, the system for universal service financing changed when the long distance market became competitive following the divestiture of AT&T and has continued to be modified as new providers of voice services, such as wireless carriers, entered the market and were required to pay into the fund. The classes of supported services have also changed over the years. With the establishment of the Schools and Libraries Program, Congress chose to cover "advanced services" such as Internet access. Nonetheless, the basic concept of relying primarily on revenues from interstate telecommunications services for the financing of explicit universal service programs or for the implicit subsidization of certain rates has remained in place.[34]

In the face of growing usage of IP telephony, there are mixed views on whether information service providers should begin contributing to the Universal Service Fund. Some in the industry argue that the system should be technologically neutral—if it looks like traditional voice service, it should be treated as such and generate contributions to the Universal Service Fund. Others are concerned that the present regulatory system not be force-fit onto information service providers. Among the experts we interviewed, there was agreement that universal service is a valid policy goal.[35] This led several of those with whom we spoke to point out that these new technologies may actually promote the goals of universal service by lowering the costs of providing communications technologies to all Americans.

[34]Some experts we spoke with thought that, ideally, universal service funds should come from the nation's general tax revenues. Others suggested it be recovered from the 3 percent telephone excise tax, originally placed on American telephone bills in 1898 to fund the Spanish-American War. One carrier we met with had a detailed plan calling for a flat, per-line fee that would appear as a line item on every telephone bill—one rate for residential and a higher rate for businesses. Another carrier felt the current method of collecting, based on reported revenues, was sound and that a flat, per-line fee would shift universal service contributions to local exchange carriers because they have the most easily ascertainable line count. In April 2001, the Consumer Energy Council of America released a report that explored several alternative funding options for universal service programs (see *Universal Service: Policy Issues for the 21st Century*, Consumer Energy Council of America, Mar. 2001).

[35]However, some experts disagreed with aspects of the current High Cost Program. They felt it should be a means-tested program—that we should not subsidize everyone who chooses to live in a rural area irregardless of their ability to afford the higher cost of telephone service in such areas.

Conclusion

Whether Congress and FCC should continue to rely largely on providers of interstate telecommunications services for the funding of federal universal service is an increasingly important debate as the world continues to migrate to digital communications technologies and IP networks. In several of our recent reports, we noted that convergence in communications markets is presently occurring as many different communications networks are redesigned or built to provide an array of services.[36] Ultimately, these various networks will each carry voice, video, and data packets. Yet, as we said in October 2000, the Communications Act was originally structured and remains a "stovepiped," or compartmentalized, law in which particular communications services are governed under particular provisions of the law. The resulting regulatory structure holds different types of networks to different rules—even when they are used to provide similar services. Fundamentally, universal service funding has been carried out under laws and regulations pertaining to "telecommunications services." It is unclear what rules should apply for voice applications that could be defined as "information services," or more importantly, whether such service distinctions should remain. We previously noted that policymakers may face challenges in deciding how, under the present structure of communications law, functionally similar services are governed over different networks. IP telephony and its effect on universal service funding is another example of this increasing dilemma.

FCC has undertaken a proceeding to examine how to streamline and reform both the manner in which it assesses carrier contributions to the Universal Service Fund and the manner in which carriers may recover those costs from their customers. Most commenters in FCC's proceeding urged the Commission to retain some form of a revenue-based assessment based on interstate and international revenues.[37] A few commenters argued

[36]See *Telecommunications: The Changing Status of Competition to Cable Television* (GAO/RCED-99-158, Jul. 8, 1999); *Telecommunications: Development of Competition in Local Telephone Markets* (GAO/RCED-00-38, Jan. 25, 2000); *Telecommunications: Technological and Regulatory Factors Affecting Consumer Choice of Internet Providers* (GAO-01-93, Oct. 12, 2000); and *Telecommunications: Characteristics and Competitiveness of the Internet Backbone Market* (GAO-02-16, Oct. 16, 2001).

[37]There was disagreement among commenters, however, on whether assessments should be on a collected, gross-billed, or projected revenue basis. The Commission also sought comment on the *de minimus* exception, the limited international revenues exception, fund sufficiency, recovery of contributions, and more. See *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Notice of Proposed Rulemaking*, FCC 01-145 (released May 8, 2001) (NPRM).

for moving to a flat fee, line-item approach. Although FCC has not yet issued an order in this proceeding, the Commission noted that it has an obligation to ensure that the universal service contribution system remains consistent with the statute, is reflective of current market trends and technologies, is simple for carriers to administer, and does not shift more than an equitable share of carrier contributions to any class of customers.[38] Nonetheless, the basic framework of funding universal service via contributions from "every telecommunications carrier that provides interstate telecommunications services" is a statutory mandate established by Congress. This statutory framework also permits FCC to require any other provider of interstate telecommunications to contribute, if the public interest so requires. If it was determined that universal service contributions should also be collected from companies and services operating outside that framework—or if the funding framework itself was found to be inadequate going forward—FCC or Congress might need to revisit how best to provide universal service to all Americans.

Scope and Methodology

To provide information on the federal universal service programs, we interviewed officials from FCC, NECA, and USAC. We also reviewed documents from FCC, NECA, and USAC regarding the funding and operation of the federal universal service programs. Additionally, we reviewed documents from academics and industry participants regarding the federal universal service programs.

We conducted a mail survey of public utility commissions to gather information on state-level universal service programs and rate-setting mechanisms. In the survey, we asked questions about state programs for deaf and disabled consumers; high cost and small local telephone companies; low-income consumers; and discounted telecommunications services for schools, libraries, and other government-related facilities. We pretested the survey with staff at five commissions to help ensure that (1) the questions in the survey were clear and unbiased, (2) the terms used in the survey were precise, and (3) the survey was not unduly burdensome. The survey was mailed to staff at public utility commissions in all 50 states and the District of Columbia. We received 51 completed questionnaires, a response rate of 100 percent. We conducted the survey from May to September 2001.

[38] NPRM at paragraph 6.

In addition, to provide information on local telephone rates and the costs of providing service, we asked public utility commissions for local telephone rates and used a model developed by FCC that provides forward-looking estimates of the cost of providing local telephone service. We asked commissions for the local telephone rates for residential and single-line business customers in randomly selected places throughout each state and the District of Columbia (see app. I for a discussion of the sample and local telephone rate data). We also used a model developed by FCC to determine the estimated costs of providing service in the same randomly selected places (see app. I for a discussion of FCC's model and our use of the model).

Finally, to assess the development of telephone service via Internet-based technology and the future funding of universal service programs, we conducted semistructured interviews with 26 industry participants and academics familiar with the development of IP telephony. These industry participants included three providers of IP telephony services, two Internet backbone providers, two long distance companies, one Regional Bell Operating Company, six equipment manufacturers, five academics, two industry analysts, three associations involved in IP telephony issues, one government agency, and one representative of large business end-users. In addition, we reviewed relevant documents from various government, industry, and academic sources.

We performed our review from January through November 2001 in accordance with generally accepted government auditing standards.

Agency Comments

We provided a draft of this report to FCC for their review and comment and subsequently spoke with the Chief of FCC's Accounting Policy Division. FCC officials stated that they were in agreement with the information presented in the report, and provided technical comments that were incorporated as appropriate.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days after the date of this letter. At that time, we will provide copies to interested congressional committees, the Chairman of FCC, and other interested parties. We also will make copies available to others upon request.

If you or your staff have any questions about this report, please call me at (202) 512-2834. Key contributors to this report are listed in appendix V.

Sincerely yours,

Peter Guerrero
Director, Physical Infrastructure Issues

Appendix I: Description of Sample Design, Local Telephone Rates, and Estimated Costs of Providing Service

In this appendix, we provide information on (1) the objectives and limitations in measuring subsidies in local telephone rates, (2) the sample design we used to select locations to gather local telephone rate and cost data, (3) the local telephone rate data that we gathered, and (4) our use of the Federal Communications Commission's (FCC) Hybrid Cost Proxy Model for estimates of the cost of providing local telephone service.

Subsidies in Local Telephone Rates

As part of our analysis on how public utility commissions set local telephone rates, we were asked to report on rates throughout the United States. Additionally, we were asked to examine how rates and the costs of providing local telephone service varied throughout the United States. To respond to these objectives, we gathered data on local telephone rates and the estimated costs of providing service for sampled locations throughout all 50 states and the District of Columbia.

Due to limitations in the available data, we did not make a comparison between local telephone rates and the estimated cost of providing service to determine the amount of a subsidy in local telephone service for particular locations. There are two reasons why we do not make this comparison. First, we only consider the monthly tariff rates for local telephone service, which exclude several additional charges paid for by consumers that provide additional funding for local telephone service. Second, the costs of providing local telephone service are estimated costs, based on FCC's model of an efficient provider using current technology at current prices. The estimated costs are used by FCC to determine and allocate federal universal service support, not to price network elements, and are not the local telephone companies' accounting costs. Additionally, industry participants identified several weaknesses associated with the model regarding cost estimates for specific locations.

Sample Design for Gathering Local Telephone Rate and Cost Data

To gather local telephone rate and cost data, we began with all 50 states and the District of Columbia. State governments, typically through a public utility commission, regulate many aspects of local telephone service within their states. These public utility commissions regulate the rates for local telephone service that many companies charge residential and business customers. Because public utility commissions regulate local telephone rates, we began our data gathering at the state level. This was necessary to collect data on local telephone rates and also to ensure that we had observations from every rate-setting jurisdiction, in this case every state.

Within each state, we sampled places[39] from three broad categories associated with population density. While public utility commissions regulate local telephone rates, these rates can vary between different areas within states. To incorporate the different rates within states, we sampled places within each state. We chose to conduct a sample, as opposed to a census, because of the large number of places. In addition, the cost of providing local telephone service varies inversely with population density. To incorporate the differences in the cost of providing local telephone service, we defined and sampled places from three broad categories that roughly represent different categories of population density: central city, suburb, and rural places.[40] We classified places in metropolitan statistical areas (MSA)[41] as either central city or suburb. The Census Bureau reports a central city for each MSA. We classified all other places within an MSA, excluding the central city, as suburbs. Finally, we classified rural places as those outside an MSA.

To sample the central cities and suburbs, we first identified all MSAs within each state and the District of Columbia. We arrayed the MSAs within each state by population and established state-specific strata, based on the MSA population. For most states, we established three strata (large, medium, and small MSA). For states with many MSAs (California, Florida, Michigan, and Texas), we established four or five strata, depending on the number of MSAs in the state. Within each stratum, we randomly selected an MSA. For states with three or fewer MSAs, we simply selected all the MSAs in the state. This sampling approach ensured that we included at least three MSAs from each state, except for states where there were

[39]As defined by the Census Bureau, a place is a concentration of population, either legally bounded as an incorporated place or delineated for statistical purposes as a census designated place.

[40]Because places are defined by political boundaries, there can be instances where the population density and categories of places that we have developed are not consistent. For example, some central cities encompass very large geographic areas and therefore have relatively few and less densely populated suburbs, while some central cities are relatively small geographically and therefore have many suburbs, some of which can be very densely populated.

[41]The general concept of an MSA is that of a core area containing a large population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. The current standards provide that each newly qualifying MSA must include at least one city with 50,000 or more inhabitants, or a Census Bureau-defined urbanized area (of at least 50,000 inhabitants) and a total metropolitan population of at least 100,000 (75,000 in New England).

fewer than three MSAs, and that we included MSAs with varying populations from each state.

Once the MSAs for each state and the District of Columbia were selected, we selected the central city, suburb, and rural places. The central cities were selected by default—the Census Bureau reports the central city for each MSA. Therefore, once the MSAs were selected, the central cities were also selected. We randomly sampled one place, excluding the central city, within the selected MSAs for inclusion as the suburb.[42] We also only included central city and suburban places that were served by local telephone companies identified by FCC as non-rural carriers. Non-rural carriers are local telephone companies that do not meet the definition of rural carrier.[43] This exclusion was necessary because FCC uses its Hybrid Cost Proxy Model only for non-rural carriers in each state. Finally, we generally sampled three rural places in each state; two rural places served by a non-rural carrier and one rural place served by a rural carrier.

Because we used a sample to develop the estimates of local telephone rates and estimated costs presented throughout this report, each estimate has a measurable precision, or sampling error, that may be expressed as a plus or minus figure. A sampling error indicates how closely we can reproduce from a sample, the results that we would obtain if we were to take a complete count of the population we are analyzing using the same measurement methods. By adding the sampling error to and subtracting it from the estimate, we can develop upper and lower bounds for each estimate. This range is called a confidence interval. Sampling errors and confidence intervals are stated at a certain confidence level—in this report, 95 percent. For example, a confidence interval at the 95-percent confidence level means that in 95 out of 100 instances, the sampling procedure used would produce a confidence interval containing the universe value we are estimating.

[42]In some instances, MSAs cross state boundaries. When this occurred, the places within the MSA, but outside the state, were excluded. Approximately 3.8 percent of the U.S. population lives in these excluded places.

[43]A rural carrier is a local telephone company that (1) provides common carrier service in a study area that does not include either any incorporated place of 10,000 inhabitants or more or any territory included in an urbanized place, (2) provides telephone exchange service to fewer than 50,000 access lines, (3) provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines, or (4) has less than 15 percent of its access lines in communities of more than 50,000 on the date of enactment of the Telecommunications Act of 1996 (Feb. 8, 1996).

Local Telephone Rates

There are three common forms of service provided by local telephone companies: unlimited service, message service, and measured service. With unlimited service, the customer pays a monthly recurring service charge and pays no additional charge for an unlimited number of local telephone calls each month. Message service also includes a monthly recurring service charge; however, the customer also pays a charge for each local telephone call, or message. With measured service, the customer pays a monthly recurring service charge and pays a charge for each local telephone call, with the charge determined by the duration of the call. The monthly recurring service charge is lower with message and measured service than with unlimited service, reflecting the charge imposed on the local telephone calls with message and measured service. In addition, message and measured service can include a monthly allowance, a certain number of local calls, units, or dollars, that the customer can incur before the per-call charges begin.

We gathered local telephone rate data for the places selected in our sample from public utility commissions. We asked for rates (the recurring service charge, monthly allowance, and cost of a 5-minute business day call) for both residential and single-line business customers. For each type of customer, we asked for the unlimited service rate and the message or measured service with the lowest rate.

Throughout the report, we provide information and analysis based on local telephone tariff rates for unlimited service. These rates do not include the federal Subscriber Line Charge, typically \$3.50 to \$5.00 per month for the primary line;[44] state and local surcharges for items such as state universal service funding, 911 service, and taxes; the federal excise tax; and long distance fees and associated universal service surcharges and other taxes. Where offered, we use the tariff rate for unlimited service (the recurring service charge). However, in some states, unlimited service is not available. In those instances, we calculated a monthly fee for a "representative customer" using the message rate. Consistent with previous FCC analysis, we assumed that a "representative customer" makes 100 5-minute calls per month for residential customers and 200 5-minute calls per month for single-line business customers. Therefore, the monthly fee in these instances is the monthly recurring service charge plus

[44] The federal Subscriber Line Charge is a monthly fee authorized by FCC and payable to the customer's local telephone company to recover a portion of the cost of providing local telephone service that is associated with interstate service. The Subscriber Line Charge increases for additional lines beyond the first, or primary, line.

the charge associated with making either 100 or 200 calls per month for residential and single-line business customers, respectively.

The Cost of Providing Local Telephone Service and FCC's Hybrid Cost Proxy Model

FCC developed a cost model, called the Hybrid Cost Proxy Model, to distribute support among non-rural carriers for the high-cost component of the federal universal service program. FCC's model is a synthesis model, based on FCC's staff-developed model and incorporating elements from two industry-sponsored models (the HAI Model sponsored by AT&T and MCI and the Benchmark Cost Proxy Model sponsored by US West, Sprint, and BellSouth). FCC's model calculates an estimated cost at the wire center[45] level. To calculate the estimated cost of providing service for each wire center, FCC's model assumes that an efficient provider constructs the most efficient network to serve existing customers from the existing wire center locations. We did not evaluate the operation of FCC's model.

For each place in our sample, we used the estimated cost directly from FCC's Hybrid Cost Proxy Model or calculated a weighted-average estimated cost. First, we identified all wire centers located in the sampled places. This was accomplished using the street address of switches from Telcordia Technologies, Inc.'s Local Exchange Routing Guide (LERG), May 2001 edition. In some suburban and rural sampled places, there was no wire center located in the place. In those instances, we found telephone numbers for government offices or schools in the place and used the LERG to identify the wire center serving the place. When we could not find a telephone number for a government office or school in the place, we chose the closest switch to the place to identify the wire center serving the place. Second, once we identified the wire centers located in or serving the place, we could determine the estimated cost for that place. If there was only a single wire center located in or serving the place, the estimated cost for that wire center was the estimated cost used in our analysis. However, if more than one wire center was located in or served the place, we calculated a weighted-average estimated cost, based on the proxy cost for each wire center, with the number of lines at each wire center serving as the weight. Because wire center boundaries do not exactly match political boundaries, there are possible biases introduced in the analysis.

[45]A wire center is a telephone company facility where customers' telephone lines originate and which also generally houses one or more switches to route customers' telephone calls.

For a variety of reasons, we believe these biases do not significantly influence our results.[46]

We discussed our use of FCC's Hybrid Cost Proxy Model with both FCC staff and industry participants, representing both local and long distance telephone companies. In general, they told us that our use of FCC's model, namely comparing relative costs between central city, suburban, and rural places, was an acceptable use of the model. Some industry participants identified several weaknesses with FCC's model. Weaknesses cited by more than one participant include (1) problems with public data used in the model (e.g., wire center boundaries could be inaccurate, Census block data from the 1990 Census could be dated); (2) customers are assumed to be uniformly distributed along roads, versus using actual customer locations; (3) certain expenses are allocated on a per-line basis; and (4) input expenses generally are nationwide, rather than company-specific values. We believe that the weaknesses the industry participants identified are not significant for our use of the model. Because we are comparing relative costs between central city, suburban, and rural places, many potential problems associated with calculating a cost estimate for a given place are not relevant because these problems will affect our estimate for each place in a similar manner.

[46]Based on conversations with FCC staff, we believe there are two factors that mitigate any possible bias introduced by the divergence between political and wire center boundaries. First, even if customers are served by wire centers outside their political jurisdiction, the impact on the estimated cost is minor because adjacent wire centers generally have similar costs. Second, biases likely offset because, while some customers in a place are served by a wire center in an adjacent place, some wire centers in the place serve customers in an adjacent place.

Appendix II: Aggregate Results of Survey of Public Utility Commissions

This appendix provides the aggregate results for our survey of public utility commissions. For each question, the numbers indicate the number of commissions selecting each response. Because some questions were not answered by all respondents and because some questions allow multiple responses, the totals do not necessarily add to 51 commissions.

GAO Survey on Local Telephone Universal Service

5/01/01

Introduction

The U.S. General Accounting Office (GAO), a federal agency that reviews programs for the U.S. Congress, is surveying public utility commissions in the 50 states and the District of Columbia. This survey asks questions about state universal service programs and policies and basic local exchange service rates. We plan to include the information from this survey and other sources in a report on the universal service program, both the federal and state components.

We recognize that this survey is one of many that you receive, including others from our agency. As a result, we have simplified the questions and omitted information that requires extensive research.

If you have questions about this survey, please call Mike Clements at 202-512-7763, Jim Sweetman at 202-512-3347, or the GAO analyst who contacted you.

Thank you for your assistance

Please provide the following information.

Name: ______________________________

Title: ______________________________

Phone: ______________________________

State: ______________________________

Instructions

Please complete all questions that are relevant for your state. Question 38 asks for residential and business local telephone rates in randomly selected communities throughout your state. As such, the information sought is of a different nature than the questions that precede it and might be completed by a different staff member.

In the near future, a GAO analyst will call you, or your designated staff member, to set up a convenient time to discuss and record your Commission's responses. It should take less than one hour to complete this telephone call. After this telephone call, please fax the local telephone rate information (answers to question 38) to Mike Clements at fax number 202-512-7477.

Abbreviations/Definitions

CLEC	competitive local exchange carrier
EAS	extended area service
FCC	Federal Communications Commission
ILEC	incumbent local exchange carrier
LEC	local exchange carrier
TRS	telecommunications relay service

1

Geographic Rate Averaging

1. We are interested in the extent of geographic rate averaging for residential consumers in your state. For the three largest ILECs that your commission regulates, based on the number of wireline access lines in your state, please provide information on the extent of geographic rate averaging for basic local exchange service for each company.

	Largest ILEC (a)	Second Largest ILEC (b)	Third Largest ILEC (c)
ILEC			
Check one for each column			
1. Rates are the same throughout the company's service territory	15	14	16
2. Rates are the same in broad geographic areas (e.g., different rates are set for urban, suburban, and rural areas)	9	5	5
3. Rates are the same in rate areas with a similar geographic size or number of access lines	19	16	14
4. Rates are the same in narrow geographic areas (e.g., different rates are set for each wire center)	0	3	1
5. Other *(Please specify below)*	8	5	5

2. For ILECs identified in question 1 with multiple rate areas, what approach best describes the philosophy for establishing the relative rates in the different rate areas?

If no ILEC has multiple rate areas, please check this box and skip to question 3. → [11]

1. [22] Value of service
2. [8] Cost of service
3. [10] Other *(Please specify)*

2

Residential and Business Rates

3. For residential and single-line business consumers in the same geographic area, what are the predominant relative rates for basic local exchange service in your state? *(Check one)*

   1. [1] Residential and business rates are the same
   2. [50] Residential rates are lower than business rates
   3. [0] Business rates are lower than residential rates

Vertical Services

Vertical services are options that consumers can add to their basic local exchange service. Examples of vertical services include call forwarding, caller ID, call waiting, and three-way calling.

4. Does your commission regulate the rates for any or all vertical services? *(Check one)*

   1. [40] Yes
   2. [10] No *(Please skip to question 6)*

5. For regulated vertical services, are rates predominantly set above cost (as you have defined or measured cost) to subsidize basic local exchange service? *(Check one)*

   1. [32] Yes
   2. [5] No

Intrastate Long Distance Access Charges

6. Are intrastate long distance access charges predominantly set above cost (as you have defined or measured cost) to subsidize basic local exchange service? *(Check one)*

   1. [23] Yes
   2. [21] No

Administration of Universal Service Fund

7. If your state has a universal service fund, who administers the fund? *(Check one)*

   If your state does not have a universal service fund, please check this box and skip to question 8. → [27]

   1. [8] State commission
   2. [1] Other state agency
   3. [8] National Exchange Carrier Association (NECA)
   4. [5] Other third party administrator
   5. [2] Other *(Please specify)*

   ____

   ____

3

Telecommunications Relay Service (TRS) and Other Services for Disabled Consumers

8. Does your state have a program or programs that provide services for deaf or disabled consumers? Only consider state programs that are independent of or that supplement the federal program. *(Check one)*

   1. [51] Yes
   2. [0] No *(Please skip to question 12)*

9. For the state portion of the program that provides services for deaf or disabled consumers, how is the program funded? *(Check one)*

   1. [26] Fee or tax levied directly on consumers
   2. [16] Fee or tax levied on telecommunications or other service companies; companies are <u>permitted</u> to pass the fee or tax onto consumers
   3. [3] Fee or tax levied on telecommunications or other service companies; companies are <u>not permitted</u> to pass the fee or tax onto consumers
   4. [0] Voluntary contributions from consumers
   5. [0] Appropriation from state legislature *(Please skip to question 11)*
   6. [6] Other *(Please specify)*

10. What telecommunications or service companies, or customers of these companies, contribute to state funding for the services for deaf or disabled consumers? *(Check all that apply)*

   1. [47] ILECs or their customers
   2. [41] CLECs or their customers
   3. [14] Long distance telephone companies or their customers
   4. [15] Wireless telephone companies or their customers
   5. [0] Internet Service Providers or their customers
   6. [6] Other *(Please specify)*

11. What was the amount of state funding in the year 2000 for services that provide assistance to deaf or disabled consumers?

   If this figure is not available, please check this box and skip to question 12. → [24]

   $ ______

4

High Cost LEC Support

12. Does your state have a program or programs that provide assistance to high cost LECs? Only consider state programs that are independent of or that supplement the federal program. *(Check one)*

    1. [21] Yes

    2. [30] No *(Please skip to question 16)*

13. For the state portion of the program that provides assistance to high cost LECs, how is the program funded? *(Check one)*

    1. [4] Fee or tax levied directly on consumers

    2. [14] Fee or tax levied on telecommunications or other service companies; companies are permitted to pass the fee or tax onto consumers

    3. [1] Fee or tax levied on telecommunications or other service companies; companies are not permitted to pass the fee or tax onto consumers

    4. [0] Voluntary contributions from consumers

    5. [0] Appropriation from state legislature *(Please skip to question 15)*

    6. [2] Other *(Please specify)*

14. What telecommunications or service companies, or customers of these companies, contribute to state funding for assistance to high cost LECs? *(Check all that apply)*

    1. [19] ILECs or their customers

    2. [18] CLECs or their customers

    3. [19] Long distance telephone companies or their customers

    4. [11] Wireless telephone companies or their customers

    5. [1] Internet Service Providers or their customers

    6. [4] Other *(Please specify)*

15. What was the amount of state funding in the year 2000 for assistance to high cost LECs?

    If this figure is not available, please check this box and skip to question 16. → [9]

    $ ____________

5

Small LEC Support

16. Does your state have a program or programs that provide assistance to small LECs? Only consider state programs that are independent of or that supplement the federal program. *(Check one)*

 1. [14] Yes

 2. [37] No *(Please skip to question 20)*

17. For the state portion of the program that provides assistance to small LECs, how is the program funded? *(Check one)*

 1. [2] Fee or tax levied directly on consumers

 2. [10] Fee or tax levied on telecommunications or other service companies;, companies are <u>permitted</u> to pass the fee or tax onto consumers

 3. [1] Fee or tax levied on telecommunications or other service companies; companies are <u>not permitted</u> to pass the fee or tax onto consumers

 4. [0] Voluntary contributions from consumers

 5. [0] Appropriation from state legislature *(Please skip to question 19)*

 6. [1] Other *(Please specify)*

18. What telecommunications or service companies, or customers of these companies, contribute to state funding for assistance to small LECs? *(Check all that apply)*

 1. [11] ILECs or their customers

 2. [9] CLECs or their customers

 3. [13] Long distance telephone companies or their customers

 4. [4] Wireless telephone companies or their customers

 5. [0] Internet Service Providers or their customers

 6. [4] Other *(Please specify)*

19. What was the amount of state funding in the year 2000 for assistance to small LECs?

 If this figure is not available, please check this box and skip to question 20. → [8]

 $ ____________

6

Programs for Low-Income Consumers

In this section, we are interested in two types of programs: programs that provide assistance to establish service and programs that provide assistance to lower monthly rates. The first four questions address programs that provide assistance to establish service.

20. Does your state have a program or programs that provide assistance to low-income consumers to establish service (e.g., a Linkup program)? Only consider state programs that are independent of or that supplement the federal program. *(Check one)*

    1. [24] Yes
    2. [27] No *(Please skip to question 24)*

21. For the state portion of the program that provides assistance to low-income consumers to establish service, how is the program funded? *(Check one)*

    1. [4] Fee or tax levied directly on consumers
    2. [8] Fee or tax levied on telecommunications or other service companies; companies are permitted to pass the fee or tax onto consumers
    3. [2] Fee or tax levied on telecommunications or other service companies; companies are not permitted to pass the fee or tax onto consumers
    4. [1] Voluntary contributions from consumers
    5. [0] Appropriation from state legislature *(Please skip to question 23)*
    6. [9] Other *(Please specify)*

    ____

    ____

22. What telecommunications or service companies, or customers of these companies, contribute to state funding for assistance to low-income consumers to establish service? *(Check all that apply)*

    1. [21] ILECs or their customers
    2. [15] CLECs or their customers
    3. [7] Long distance telephone companies or their customers
    4. [4] Wireless telephone companies or their customers
    5. [0] Internet Service Providers or their customers
    6. [4] Other *(Please specify)*

    ____

    ____

    ____

    ____

23. What was the amount of state funding in the year 2000 for services that provide assistance to low-income consumers to establish service?

    If this figure is not available, please check this box and skip to question 24. → [16]

    $ ______________

7

The following four questions address programs that provide assistance to lower monthly rates.

24. Does your state have a program or programs that provide assistance to low-income consumers to lower monthly rates (e.g., a Lifeline program)? Only consider state programs that are independent of or that supplement the federal program. *(Check one)*

    1. [39] Yes

    2. [12] No *(Please skip to question 28)*

25. For the state portion of the program that provides assistance to low-income consumers to lower monthly rates, how is the program funded? *(Check one)*

    1. [9] Fee or tax levied directly on consumers

    2. [12] Fee or tax levied on telecommunications or other service companies; companies are permitted to pass the fee or tax onto consumers

    3. [2] Fee or tax levied on telecommunications or other service companies; companies are not permitted to pass the fee or tax onto consumers

    4. [1] Voluntary contributions from consumers

    5. [0] Appropriation from state legislature *(Please skip to question 27)*

    6. [15] Other *(Please specify)*

    ____

    ____

    ____

26. What telecommunications or service companies, or customers of these companies, contribute to state funding for assistance to low-income consumers to lower monthly rates? *(Check all that apply)*

    1. [33] ILECs or their customers

    2. [24] CLECs or their customers

    3. [13] Long distance telephone companies or their customers

    4. [12] Wireless telephone companies or their customers

    5. [0] Internet Service Providers or their customers

    6. [8] Other *(Please specify)*

    ____

    ____

    ____

    ____

27. What was the amount of state funding in the year 2000 for services that provide assistance to low-income consumers to lower monthly rates?

    If this figure is not available, please check this box and skip to question 28. → [19]

    $ ____________________

8

Support for Schools, Libraries, Health Care Facilities, and Other Government/Community Facilities

In this section, we are interested in programs that discount or subsidize telecommunications or Internet services, such as a state communications network or an e-rate or similar program. The first four questions address a state communications network that provides discounted or subsidized telecommunications or Internet services.

28. Does your state have a communications network that provides discounted or subsidized telecommunications or Internet services for schools, libraries, health care facilities, or other government/community facilities? *(Check one)*

    1. [17] Yes
    2. [34] No *(Please skip to question 33)*

29. Which types of facilities does the state communications network support? *(Check all that apply)*

    1. [16] Schools
    2. [13] Libraries
    3. [7] Health care
    4. [10] Government
    5. [7] Community/Non-profit
    6. [4] Other *(Please specify)*

30. How is the state communications network funded? *(Check one)*

    1. [0] Fee or tax levied directly on consumers
    2. [2] Fee or tax levied on telecommunications or other service companies; companies are permitted to pass the fee or tax onto consumers
    3. [0] Fee or tax levied on telecommunications or other service companies; companies are not permitted to pass the fee or tax onto consumers
    4. [0] Voluntary contributions from consumers
    5. [5] Appropriation from state legislature *(Please skip to question 32)*
    6. [10] Other *(Please specify)*

9

31. What telecommunications or service companies, or customers of these companies, contribute to state funding for the state communications network? *(Check all that apply)*

   1. [5] ILECs or their customers
   2. [3] CLECs or their customers
   3. [3] Long distance telephone companies or their customers
   4. [2] Wireless telephone companies or their customers
   5. [1] Internet Service Providers or their customers
   6. [6] Other *(Please specify)*

____

____

____

____

32. What was the amount of state funding in the year 2000 for the state communications network?

If this figure is not available, please check this box and skip to question 33. → [11]

$ ______________

The following four questions address an e-rate or similar program that provides discounted or subsidized telecommunications or Internet services.

33. Does your state have an e-rate or similar program that discounts or subsidizes in some way the costs of telecommunications or Internet services for schools, libraries, health care facilities, or other government/ community facilities? Only consider a state program that is independent of or that supplements the federal program. *(Check one)*

   1. [13] Yes
   2. [38] No *(Please skip to question 38)*

34. Which types of facilities does the state e-rate or similar program support? *(Check all that apply)*

   1. [13] Schools
   2. [11] Libraries
   3. [4] Health care
   4. [2] Government
   5. [3] Community/Non-profit
   6. [3] Other *(Please specify)*

____

____

____

____

10

35. For the state portion of the e-rate or similar program that discounts or subsidizes telecommunications or Internet services, how is the program funded? *(Check one)*

1. [2] Fee or tax levied directly on consumers
2. [4] Fee or tax levied on telecommunications or other service companies; companies are permitted to pass the fee or tax onto consumers
3. [0] Fee or tax levied on telecommunications or other service companies; companies are not permitted to pass the fee or tax onto consumers
4. [0] Voluntary contributions from consumers
5. [1] Appropriation from state legislature *(Please skip to question 37)*
6. [6] Other *(Please specify)*

____

____

____

____

36. What telecommunications or service companies, or customers of these companies, contribute to state funding for the e-rate or similar program that discounts or subsidizes telecommunications or Internet services? *(Check all that apply)*

1. [8] ILECs or their customers
2. [6] CLECs or their customers
3. [5] Long distance telephone companies or their customers
4. [3] Wireless telephone companies or their customers
5. [0] Internet Service Providers or their customers
6. [5] Other *(Please specify)*

____

____

____

____

37. What was the amount of state funding in the year 2000 for the state e-rate or similar program that provides discounts or subsidize telecommunications or Internet services?

If this figure is not available, please check this box and skip to question 38. → [8]

$ ________________

11

Residential and Single-Line Business Rates

In this section, we are interested in ILECs' basic local exchange service rates. We seek information on rates for residential and single-line business consumers in randomly selected central city, suburban, and rural places.

38. For the communities identified on the following page or pages, please provide the requested information. Below are instructions and descriptions of the row and column categories.

    For purposes of determining the service, please provide information on basic local exchange service for residential and single-line business consumers with the following features:

    - primary line
    - single party dial-tone service
    - touch tone or equivalent capability

    Columns: For each community, please provide information for the following types of services, to the extent the services are available in your state and in specified communities:

    - unlimited/flat rate service, excluding any optional extended area service (EAS) plan
    - lowest rate message or measured service (if both, provide information on the lowest rate service)

Rows 2 and 8: The "recurring service charge" is the monthly rate in the ILEC's tariff.

Rows 3 and 9: The "federal subscriber line charge" is the monthly, per line charge the Federal Communications Commission (FCC) allows the ILEC to include on end-user consumers' bills.

Rows 4 and 10: The "state surcharges" are state commission approved charges to support intrastate telephone service, including state subscriber line charges and charges for support of state universal service programs. Do not include state or local 911 and related fees and excise, sales, or gross receipts taxes.

Rows 5, 6, 11, and 12: The "units" or "dollars or units in the base rate" include the number of calls, dollar amount, or minutes of use that consumers with message or measured rate service can incur before the imposition of per call or per minute charges begins.

12

Appendix III: State-Level Universal Service Programs

This appendix provides information on the presence of state-level universal service programs in the 50 states and the District of Columbia. We gathered this information from our survey of public utility commissions. In table 2, a check mark (✔) indicates the presence of the program in the state.

Table 2: Presence of State-Level Universal Service Programs for Each State and the District of Columbia

State	Deaf or disabled customers	High-cost local telephone company	Small local telephone company	Low income – establish service	Low income – lower monthly rate	State communications network	State E-Rate program
Alabama	✔						
Alaska	✔	✔	✔		✔		
Arizona	✔	✔		✔	✔		
Arkansas	✔			✔	✔		
California	✔	✔	✔	✔	✔		✔
Colorado	✔	✔		✔	✔		
Connecticut	✔			✔	✔		
Delaware	✔						
District of Columbia	✔			✔	✔		
Florida	✔				✔	✔	✔
Georgia	✔		✔	✔	✔		
Hawaii	✔	✔			✔		✔
Idaho	✔	✔	✔		✔		
Illinois	✔	✔	✔	✔	✔	✔	
Indiana	✔		✔				
Iowa	✔					✔	
Kansas	✔	✔			✔	✔	✔
Kentucky	✔				✔	✔	
Louisiana	✔					✔	
Maine	✔			✔	✔	✔	✔
Maryland	✔			✔	✔		
Massachusetts	✔			✔	✔		
Michigan	✔			✔	✔		
Minnesota	✔				✔		
Mississippi	✔			✔	✔		
Missouri	✔					✔	✔
Montana	✔			✔	✔		✔
Nebraska	✔	✔			✔		
Nevada	✔	✔					
New Hampshire	✔						
New Jersey	✔					✔	✔
New Mexico	✔	✔	✔	✔	✔		
New York	✔			✔	✔		

State	Deaf or disabled customers	High-cost local telephone company	Small local telephone company	Low income – establish service	Low income – lower monthly rate	State communications network	State E-Rate program
North Carolina	✔	✔	✔		✔		
North Dakota	✔						
Ohio	✔			✔	✔	✔	✔
Oklahoma	✔	✔	✔		✔	✔	✔
Oregon	✔	✔	✔		✔		
Pennsylvania	✔	✔	✔		✔		
Rhode Island	✔			✔	✔	✔	
South Carolina	✔	✔	✔	✔	✔	✔	
South Dakota	✔						
Tennessee	✔				✔		✔
Texas	✔	✔	✔	✔	✔		✔
Utah	✔	✔		✔	✔		
Vermont	✔				✔	✔	
Virginia	✔					✔	
Washington	✔	✔		✔	✔	✔	
West Virginia	✔				✔		
Wisconsin	✔	✔		✔	✔	✔	✔
Wyoming	✔	✔	✔	✔	✔		

Note: A check mark (✔) indicates the presence of the program in the state.

Source: GAO's survey of public utility commissions (May – Sept. 2001).

Appendix IV: Local Telephone Rates

This appendix provides the residential and single-line business local telephone rates for sampled places (see app. I for detailed information regarding the sample design). We gathered the monthly tariff rates for the sampled places from public utility commissions in all 50 states and the District of Columbia. The rates listed below are based on responses from the public utility commission and do not include the weights used to generate the point estimates and confidence intervals reported in the letter.

The rates listed below are the monthly tariff rates. Where unlimited service was available, we report the tariff rate for that service. If unlimited service was not available, we report the tariff rate for message service, assuming 100 5-minute calls per month for residential customers and 200 5-minute calls per month for single-line business customers. Also, the monthly tariff rates that we report exclude the federal Subscriber Line Change; federal, state, and local surcharges for items such as universal service funding, 911 service, and taxes; the federal excise tax; and long distance fees and associated universal service surcharges and other taxes.

Table 3: Residential and Single-Line Business Monthly Tariff Local Telephone Rates for Sampled Places by State

State	Place name	Type of place	Residential rate	Single-line business rate
Alabama	Auburn	Central city	$15.95	$36.23
	Notasulga	Suburb	16.38	41.38
	Birmingham	Central city	16.30	36.23
	Morris	Suburb	16.30	36.23
	Decatur	Central city	16.30	36.23
	Hillsboro	Suburb	15.95	36.23
	Baileyton	Non-MSA	15.95	36.23
	Goodwater	Non-MSA	15.65	36.23
	Oak Hill	Non-MSA	15.85	32.60
Alaska	Anchorage	Central city	9.70	25.75
	Allakaket	Non-MSA	15.60	26.05
	Toksook Bay	Non-MSA	19.23	34.00
Arizona	Flagstaff	Central city	13.18	32.78
	Williams	Suburb	13.18	32.78
	Phoenix	Central city	13.18	32.78
	Gila Bend	Suburb	13.18	32.78
	Tucson	Central city	13.18	32.78
	South Tucson	Suburb	13.18	32.78
	Clifton	Non-MSA	12.40	16.65
	Sierra Vista	Non-MSA	13.18	32.78
	Winslow	Non-MSA	13.18	32.78

State	Place name	Type of place	Residential rate	Single-line business rate
Arkansas	Fort Smith	Central city	14.91	30.66
	Barling	Suburb	14.91	30.66
	Little Rock	Central city	16.31	33.61
	Wrightsville	Suburb	16.31	33.61
	Pine Bluff	Central city	14.91	30.66
	Sherrill	Suburb	12.11	24.81
	Haynes	Non-MSA	13.51	27.71
	Oil Trough	Non-MSA	12.11	24.81
	Pollard	Non-MSA	18.65	40.95
California	Los Angeles[a]	Central city	10.69	64.35
	San Fernando[a]	Suburb	17.25	35.22
	Merced[a]	Central city	10.69	64.35
	Dos Palos[a]	Suburb	16.85	35.22
	Sacramento[a]	Central city	10.69	64.35
	Placerville[a]	Suburb	10.69	64.35
	Salinas[a]	Central city	10.69	64.35
	Greenfield[a]	Suburb	10.69	64.35
	Dorris	Non-MSA	16.05	25.69
	El Centro[a]	Non-MSA	11.12	65.73
	Hanford[a]	Non-MSA	10.69	64.35
Colorado	Boulder	Central city	14.91	34.60
	Lafayette	Suburb	14.91	34.60
	Colorado Springs	Central city	14.91	34.60
	Monument	Suburb	14.91	34.60
	Pueblo	Central city	14.91	34.60
	Boone	Suburb	14.91	34.60
	Buena Vista	Non-MSA	14.91	34.60
	Leadville	Non-MSA	14.91	34.60
	Two Buttes	Non-MSA	14.74	36.79
Connecticut	Hartford	Central city	14.53	39.13
	Groton	Suburb	11.53	31.03
	Stamford	Central city	12.53	33.73
	New Canaan	Suburb	11.53	31.03
	Waterbury	Central city	13.53	36.43
	Bethlehem[b]	Suburb	15.95	N/A
	Chester Center	Non-MSA	10.53	28.33
	Essex	Non-MSA	10.53	28.33
Delaware	Dover	Central city	10.96	26.63
	Felton	Suburb	10.96	26.63
	Wilmington	Central city	11.62	26.83
	Newport	Suburb	11.62	26.83
	Lewes	Non-MSA	11.62	26.83
	Millville	Non-MSA	11.62	26.83

State	Place name	Type of place	Residential rate	Single-line business rate
District of Columbia	Washington[a]	Central city	12.78	25.53
Florida	Fort Walton Beach	Central city	10.15	21.60
	Destin	Suburb	10.15	21.60
	Jacksonville	Central city	10.46	28.43
	Fernandina Beach	Suburb	8.22	22.24
	Lakeland	Central city	11.55	28.70
	Bartow	Suburb	11.55	28.70
	Tallahassee	Central city	10.65	22.75
	Havana	Suburb	9.29	25.29
	Carrabelle	Non-MSA	9.15	24.00
	Fanning Springs	Non-MSA	11.17	30.27
	Okeechobee	Non-MSA	7.47	17.70
Georgia	Augusta	Central city	14.85	37.30
	Hephzibah	Suburb	14.85	37.30
	Columbus	Central city	14.85	37.30
	Hamilton	Suburb	14.85	37.30
	Macon	Central city	14.85	37.30
	Payne	Suburb	14.85	37.30
	Aldora	Non-MSA	17.45	48.30
	Avera	Non-MSA	12.50	24.90
	Tunnel Hill	Non-MSA	20.78	41.58
Hawaii	Honolulu	Central city	14.40	35.60
	Hana	Non-MSA	12.50	24.30
	Kailua	Non-MSA	14.40	35.60
Idaho	Boise City	Central city	17.46	32.47
	Caldwell	Suburb	17.46	32.47
	Pocatello	Central city	17.46	32.47
	Inkom	Suburb	17.46	32.47
	Dietrich	Non-MSA	17.46	32.47
	Mackay	Non-MSA	24.10	42.00
	Wendell	Non-MSA	17.46	32.47
Illinois	Champaign[c]	Central city	13.00	31.87
	Homer[c]	Suburb	20.77	37.89
	Chicago[c]	Central city	9.53	28.21
	Arlington Heights[c]	Suburb	13.00	31.87
	Peoria[c]	Central city	13.00	31.87
	Minier[c]	Suburb	20.77	37.89
	Clayton[c]	Non-MSA	20.77	37.89
	Neponset[c]	Non-MSA	20.77	37.89
	Pocahontas	Non-MSA	4.22	9.55
Indiana	Fort Wayne	Central city	17.56	30.18
	Waterloo	Suburb	12.35	30.18
	Indianapolis	Central city	12.17	47.40

State	Place name	Type of place	Residential rate	Single-line business rate
	Edgewood	Suburb	10.48	37.75
	Kokomo	Central city	9.75	31.93
	Windfall	Suburb	15.94	30.18
	Elnora	Non-MSA	20.45	30.75
	Ladoga	Non-MSA	9.75	31.93
	Marengo	Non-MSA	17.56	30.18
Iowa	Davenport	Central city	12.65	31.18
	Panorama Park	Suburb	12.65	31.18
	Des Moines	Central city	12.65	31.18
	Hartford	Suburb	12.65	31.18
	Dubuque	Central city	11.68	29.24
	Durango	Suburb	11.68	29.24
	Atlantic City	Non-MSA	10.71	27.30
	Corning	Non-MSA	7.50	13.52
	Renwick	Non-MSA	10.71	27.30
Kansas	Lawrence	Central city	13.90	26.20
	Eudora	Suburb	13.90	26.20
	Topeka	Central city	13.90	26.20
	Auburn	Suburb	14.75	27.70
	Wichita	Central city	14.20	28.40
	El Dorado	Suburb	13.90	24.50
	Beloit	Non-MSA	13.90	22.75
	Milford	Non-MSA	16.00	19.45
	Parsons	Non-MSA	13.90	24.50
Kentucky	Lexington	Central city	18.95	32.00
	Stamping Ground	Suburb	15.22	35.90
	Louisville	Central city	18.40	35.25
	Plymouth Village	Suburb	18.40	35.25
	Owensboro	Central city	14.37	35.90
	Whitesville	Suburb	14.37	35.90
	Lewisburg	Non-MSA	16.50	24.80
	Scottsville	Non-MSA	13.20	32.31
	Stanford	Non-MSA	12.77	35.00
Louisiana	Houma	Central city	12.43	32.87
	Lockport	Suburb	10.97	28.68
	Monroe	Central city	12.64	33.00
	Sterlington	Suburb	12.64	33.00
	New Orleans	Central city	12.64	33.00
	Westwego	Suburb	12.64	33.00
	Jena	Non-MSA	16.80	33.60
	New Llano	Non-MSA	11.81	31.40
	Vidalia	Non-MSA	11.81	31.40
Maine	Bangor	Central city	16.91	35.81

State	Place name	Type of place	Residential rate	Single-line business rate
	Belfast	Suburb	15.63	35.13
	Lewiston	Central city	16.91	35.81
	Auburn	Suburb	16.91	35.81
	Portland	Central city	16.91	35.81
	Westbrook	Suburb	16.91	35.81
	Augusta	Non-MSA	16.91	35.81
	Waterville	Non-MSA	16.03	35.47
Maryland	Baltimore[a]	Central city	16.26	31.54
	Manchester[a]	Suburb	15.51	33.96
	Cumberland[a]	Central city	15.01	33.96
	Frostburg[a]	Suburb	15.01	33.96
	Hagerstown[a]	Central city	15.01	33.96
	Hancock[a]	Suburb	15.51	33.96
	Eldorado[a]	Non-MSA	15.01	33.96
	Kitzmiller[a]	Non-MSA	15.01	33.96
Massachusetts	Boston[a]	Central city	17.34	32.00
	Taunton	Suburb	17.34	39.77
	Fitchburg	Central city	17.34	39.77
	Templeton	Suburb	17.34	39.77
	Lowell	Central city	17.34	39.77
	Chelmsfor[d]	Suburb	17.34	39.77
	Bourne	Non-MSA	17.34	39.77
	Williamstown	Non-MSA	17.34	39.77
Michigan	Ann Arbor[a,d]	Central city	43.95	30.84
	Milan[a,d]	Suburb	43.95	31.61
	Benton Harbor[a,d]	Central city	43.95	31.61
	Eau Claire[a,d]	Suburb	43.95	31.61
	Detroit[a,d]	Central city	43.95	30.57
	Wayne[a,d]	Suburb	43.95	30.84
	Grand Rapids[a,d]	Central city	43.95	30.84
	East Grand Rapids[a,d]	Suburb	43.95	30.84
	Custer[a,d]	Non-MSA	43.95	31.61
	Fairgrove[a,d]	Non-MSA	43.95	31.61
	Sturgis	Non-MSA	13.66	15.80
Minnesota	Minneapolis	Central city	14.76	43.29
	Clear Lake	Suburb	14.25	28.50
	Rochester	Central city	13.96	34.61
	Stewartville	Suburb	13.96	34.61
	St. Cloud	Central city	13.96	34.61
	Sauk Rapids	Suburb	13.96	34.61
	Hutchinson	Non-MSA	12.06	21.56
	Milaca	Non-MSA	14.25	28.50
	Rock Creek	Non-MSA	13.96	34.61

State	Place name	Type of place	Residential rate	Single-line business rate
Mississippi	Gulfport	Central city	19.01	36.95
	Ocean Springs	Suburb	18.66	36.95
	Hattiesburg	Central city	17.95	36.95
	Purvis	Suburb	14.79	34.61
	Jackson	Central city	19.01	36.95
	Canton	Suburb	15.50	36.95
	Duck Hill	Non-MSA	15.15	35.78
	McComb	Non-MSA	16.90	36.95
	Polkville	Non-MSA	20.88	30.83
Missouri	Columbia	Central city	9.91	18.33
	Harrisburg	Suburb	9.91	18.33
	Joplin	Central city	9.02	22.89
	Duenweg	Suburb	9.02	22.89
	St. Louis	Central city	11.25	33.24
	Bella Villa	Suburb	11.25	33.24
	Bragg City	Non-MSA	7.48	16.69
	Galt	Non-MSA	14.76	8.89
	Wyatt	Non-MSA	7.48	16.69
Montana	Billings	Central city	16.73	34.21
	Laurel	Suburb	16.73	34.21
	Great Falls	Central city	16.73	34.21
	Cascade	Suburb	16.73	34.21
	Dillon	Non-MSA	16.73	34.21
	Whitehall	Non-MSA	16.73	34.21
Nebraska	Lincoln	Central city	17.50	28.80
	Roca	Suburb	17.50	28.80
	Omaha	Central city	18.15	32.84
	Avoca	Suburb	17.50	28.80
	Edison	Non-MSA	17.50	27.50
	Hebron	Non-MSA	17.50	28.80
	Humphrey	Non-MSA	18.15	32.84
Nevada	Las Vegas	Central city	9.05	18.25
	Henderson	Suburb	9.05	18.25
	Reno	Central city	10.75	22.00
	Sparks	Suburb	10.75	22.00
	Carson City	Non-MSA	10.75	22.00
	Lovelock	Non-MSA	10.75	22.00
	Yerington	Non-MSA	10.08	23.00
New Hampshire	Manchester	Central city	15.73	44.67
	Franklin	Suburb	14.45	40.31
	Nashua	Central city	15.73	44.67
	Mason	Suburb	13.29	35.93
	Rochester	Central city	14.45	40.31

State	Place name	Type of place	Residential rate	Single-line business rate
	Somersworth	Suburb	14.45	40.31
	Hillsborough	Non-MSA	12.68	21.20
	Littleton	Non-MSA	12.14	31.75
	Whitefield	Non-MSA	12.14	31.75
New Jersey	Atlantic City[a]	Central city	7.45	20.01
	Cape May Point[a]	Suburb	7.45	20.01
	Jersey City[a]	Central city	8.19	21.21
	Hoboken[a]	Suburb	8.19	21.21
	Newark[a]	Central city	8.19	21.21
	Victory Gardens[a]	Suburb	7.45	20.01
New Mexico	Albuquerque	Central city	10.66	34.37
	Bernalillo	Suburb	10.66	34.37
	Las Cruces	Central city	10.66	34.37
	Sunland Park	Suburb	10.66	34.37
	Santa Fe	Central city	10.66	34.37
	Angel Fire	Non-MSA	10.66	34.37
	Encino	Non-MSA	13.00	17.50
	Las Vegas	Non-MSA	10.66	34.37
New York	Glens Falls[a]	Central city	16.65	35.54
	Whitehall[a]	Suburb	15.28	35.54
	New York[a]	Central city	20.16	35.54
	Bronxville[a]	Suburb	20.16	35.54
	Newburgh[a]	Central city	16.65	35.54
	Cornwall on Hudson[a]	Suburb	16.65	35.54
	Rochester[a]	Central city	11.71	33.72
	Sodus Point[a]	Suburb	16.65	35.54
	Cattaraugus[a]	Non-MSA	13.14	35.54
	Chaumont	Non-MSA	11.41	20.18
	Ithaca[a]	Non-MSA	15.28	35.54
North Carolina	Asheville	Central city	12.19	32.83
	Biltmore Forest	Suburb	12.19	32.83
	Charlotte	Central city	12.53	33.95
	Lake Park	Suburb	12.26	32.22
	Rocky Mount	Central city	12.52	30.23
	Castalia	Suburb	11.49	27.87
	Broadway	Non-MSA	12.26	32.22
	Elk Park	Non-MSA	10.47	28.22
	Whiteville	Non-MSA	11.10	26.95
North Dakota	Bismarck	Central city	17.69	28.74
	Mandan	Suburb	17.69	28.74
	Fargo	Central city	17.69	31.35
	Grandin	Suburb	17.69	31.35
	Grand Forks	Central city	17.69	28.74

State	Place name	Type of place	Residential rate	Single-line business rate
	Emerado	Suburb	17.69	28.74
	Belfield	Non-MSA	17.69	28.74
	Cayuga	Non-MSA	14.13	33.20
	Watford	Non-MSA	17.99	26.02
Ohio	Canton[a]	Central city	14.25	36.95
	Waynesburg[a]	Suburb	14.35	36.95
	Dayton[a]	Central city	14.25	32.45
	Miamisburg[a]	Suburb	14.25	36.95
	Lima	Central city	16.05	36.80
	Delphos	Suburb	14.95	32.45
	Clarksville	Non-MSA	13.93	27.86
	Leipsic	Non-MSA	16.65	26.89
	Middleport	Non-MSA	13.93	27.86
Oklahoma	Lawton	Central city	12.07	32.44
	Cache	Suburb	12.07	32.44
	Oklahoma City	Central city	13.72	39.81
	Lake Aluma	Suburb	13.72	39.81
	Tulsa	Central city	13.72	39.81
	Claremore	Suburb	13.72	39.81
	Achille	Non-MSA	10.25	12.05
	Pawnee	Non-MSA	10.22	22.08
	Pocola	Non-MSA	12.07	32.44
Oregon	Corvallis	Central city	12.80	26.40
	Albany	Suburb	12.80	26.40
	Eugene	Central city	12.80	26.40
	Junction City	Suburb	12.80	28.90
	Portland	Central city	12.80	26.40
	Yamhill	Suburb	12.59	28.27
	Adams	Non-MSA	12.80	30.50
	Hood River	Non-MSA	13.43	24.00
	Milton-Freewater	Non-MSA	12.80	28.90
Pennsylvania	Johnstown	Central city	13.80	29.26
	Franklin	Suburb	12.83	26.49
	Philadelphia[a]	Central city	13.43	24.23
	Oxford[a]	Suburb	10.88	31.73
	Scranton[a]	Central city	12.13	29.23
	Exeter[a]	Suburb	12.13	29.23
	Burlington	Non-MSA	9.36	14.12
	Saltsburg	Non-MSA	9.87	18.28
	South New Castle[a]	Non-MSA	8.28	31.73
Rhode Island	Providence[a]	Central city	17.26	59.91
	East Providence[a]	Suburb	17.26	59.91
South Carolina	Columbia	Central city	15.40	42.75

State	Place name	Type of place	Residential rate	Single-line business rate
	Arcadia Lakes	Suburb	15.40	42.75
	Greenville	Central city	15.40	42.75
	Norris	Suburb	14.05	37.65
	Sumter	Central city	15.96	32.75
	Bluffton	Non-MSA	8.34	14.32
	Calhoun Falls	Non-MSA	15.96	32.75
	Springfield	Non-MSA	12.70	32.55
South Dakota	Rapid City	Central city	17.75	36.60
	Hill City	Suburb	17.75	36.60
	Sioux Falls	Central city	18.25	38.40
	Tea	Suburb	18.25	38.40
	Chamberlain	Non-MSA	15.75	29.65
	Kranzburg	Non-MSA	16.55	32.45
	Madison	Non-MSA	16.55	32.45
Tennessee	Jackson	Central city	9.80	35.75
	Humboldt	Suburb	9.25	33.80
	Johnson City	Central city	13.01	33.87
	Bristol	Suburb	13.01	33.87
	Memphis	Central city	12.90	42.70
	Piperton	Suburb	12.90	42.70
	Cumberland Gap	Non-MSA	9.25	33.80
	Dover	Non-MSA	8.30	30.05
	Rutherford	Non-MSA	5.86	10.46
Texas	Galveston	Central city	9.10	11.45
	Jamaica Beach	Suburb	9.10	11.45
	Houston	Central city	11.05	28.25
	El Lago	Suburb	11.05	28.25
	Victoria	Central city	8.80	20.65
	Waco	Central city	9.10	11.45
	Bruceville-Eddy	Suburb	9.10	11.45
	Putnam	Non-MSA	20.00	30.00
	Roaring Springs	Non-MSA	7.10	18.35
	Winters	Non-MSA	7.10	18.35
Utah	Provo	Central city	11.03	19.37
	Springville	Suburb	11.03	19.37
	Salt Lake City	Central city	11.03	19.37
	Bountiful	Suburb	11.03	19.37
	Castle Valley	Non-MSA	13.50	23.00
	River Heights	Non-MSA	11.03	19.37
	Salina	Non-MSA	11.03	19.37
Vermont	Burlington[c]	Central city	24.55	55.00
	South Burlington[c]	Suburb	24.55	55.00
	Jeffersonville[c]	Non-MSA	24.55	55.00

State	Place name	Type of place	Residential rate	Single-line business rate
	Newport[c]	Non-MSA	24.55	55.00
	Westminster[c]	Non-MSA	25.20	48.25
Virginia	Lynchburg	Central city	12.64	45.50
	Altavista	Suburb	15.04	30.48
	Virginia Beach	Central city	14.30	53.18
	Hampton	Suburb	14.30	53.18
	Roanoke	Central city	13.59	49.33
	Buchanan	Suburb	12.64	45.50
	Iron Gate	Non-MSA	12.65	29.50
	Melfa	Non-MSA	11.91	41.76
	Radford	Non-MSA	12.64	45.50
Washington	Bellingham	Central city	12.50	26.89
	Bremerton	Central city	12.50	26.89
	Bainbridge Island	Suburb	12.50	26.89
	Seattle	Central city	12.50	26.89
	Kenmore	Suburb	13.25	31.10
	Mossyrock	Non-MSA	14.30	20.50
	Tekoa	Non-MSA	11.84	27.28
	Warden	Non-MSA	12.50	26.89
West Virginia	Huntington	Central city	15.00	55.00
	Milton	Suburb	15.00	55.00
	Parkersburg	Central city	15.00	55.00
	Vienna	Suburb	15.00	55.00
	Wheeling	Central city	15.00	55.00
	Moundsville	Suburb	15.00	55.00
	Keystone	Non-MSA	15.00	55.00
	Shinnston	Non-MSA	15.00	55.00
	Terra Alta	Non-MSA	15.00	55.00
Wisconsin	Janesville[c]	Central city	10.67	32.85
	Footville	Suburb	19.48	25.00
	Madison[c]	Central city	10.67	32.85
	Stoughton[c]	Suburb	10.67	32.85
	Wausau[a]	Central city	18.25	36.65
	Brokaw[a]	Suburb	18.25	36.65
	Clintonville	Non-MSA	12.50	21.00
	Genoa[c]	Non-MSA	10.67	32.85
	North Freedom[c]	Non-MSA	13.35	42.60
Wyoming	Casper	Central city	23.10	23.10
	Evansville	Suburb	23.10	23.10
	Cheyenne	Central city	23.10	23.10
	Gillette	Non-MSA	23.10	23.10
	Hudson	Non-MSA	48.60	48.60
	Rock River	Non-MSA	$40.95	$40.95

[a]Rate for single-line business customers calculated based on message rate.

[b]Rate for residential customers calculated based on message rate.

[c]Rate for residential and single-line business customers calculated based on message rate.

[d]For residential customers, there is an unlimited basic service available for $43.95. According to staff at the Michigan Public Service Commission, most residential customers purchase a message-rate service that allows 400 calls per month. The recurring service charge for this service is $12.01, not including any per-call charges that would be incurred for calls in excess of 400 per month.

Source: GAO's survey of state public utility commissions (May – Sept. 2001).

Appendix V: GAO Contacts and Staff Acknowledgments

GAO Contacts

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